In the Lab:
Netbooks – The Perfect Back to School Companions

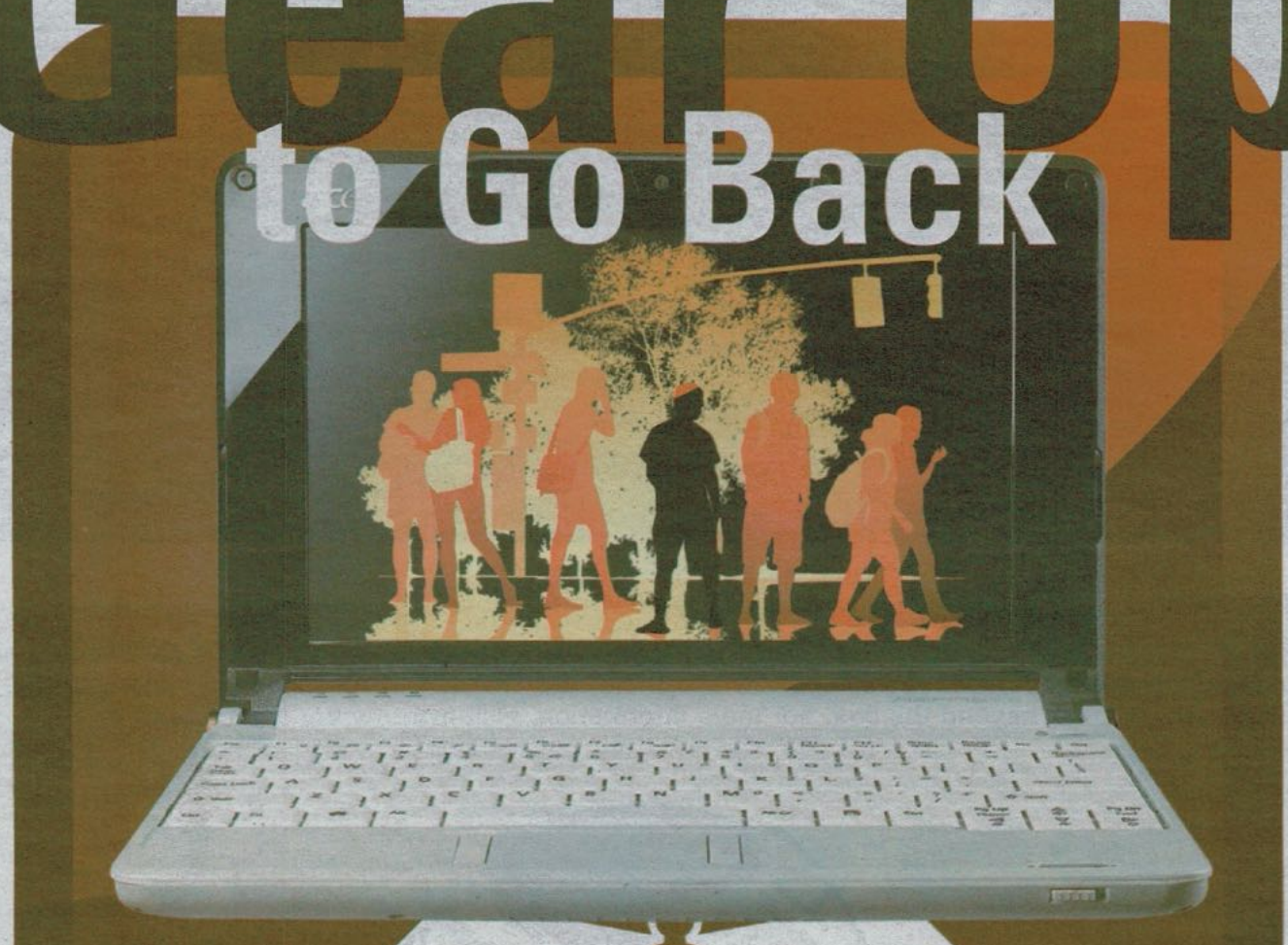
HUB
The Computer Paper
September 2008 Volume 21 Number 09 Free

Intel Centrino 2:
A Star is Born?

10 Tips:
MS Word for Students

E3 2008:
News From the Floor

Gear Up to Go Back



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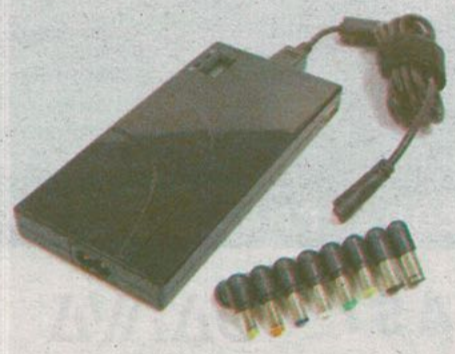

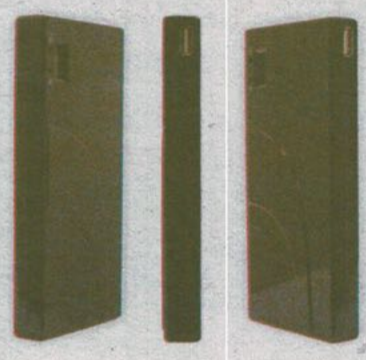

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Workin' hard or hardly workin'?

That was a favourite saying of an old boss of mine when I was a grocery store stock clerk earning minimum wage while saving for college. Another favourite, often bandied about in Saturday morning stock clerk pep talks cum debilitating attacks on both moral character and work ethic was "you're a bunch of hungry beavers and the store is a forest so... go to it!" No one had the heart, or perhaps the guts, to tell our erstwhile overlord that beavers don't so much eat wood as they do destroy it and put it to their own use. Perhaps not the best metaphor to be using with the bunch of hormonal oafs you've entrusted with the tens of thousands of dollars worth of stock waiting to be put on the shelves.

I digress.

Workin' hard or hardly workin'? Ideally, both. It's approaching the end of summer. An end to summer vacations, kids going back to school after eight weeks off, returning to find they've forgotten half of what they learned last year. Parents going back to work after a week off to find a full email inbox, a full voicemail inbox and an even more full schedule as they try to clear their inboxes both virtual and physical.

The summer is a time to forget about work, at least for a little while. To connect with nature or to lounge about at a resort, to go for bike rides or go canoeing. But work is not a thing easily forgotten. The BlackBerrys on our hips, the laptops in our bags, the cell phones in our pockets are all a testament to that. Still, we do manage to get away for a while... though I for one am all for a few more summer long weekends and the downtime they offer.

This is the back to school and work issue of HUB: The Computer Paper. This month, we focus on technology to make returning to the campus or office as painless as possible. In the Lab, we take a close look at netbooks. This is a product category that's particularly near to my heart. For as long as I've been doing this ("this" being HUB: The Computer Paper, both in present and previous forms), I've been looking for the perfect portable PC. For my needs, netbooks are as close as I've ever seen. Near instant start-up? Check. A full QWERTY keyboard that allows me to approach my words per minute count with a full-sized desktop keyboard? Check: My WPM is close to the same on a netbook as it is on my desktop. All the applications I need for day-to-day use? Check. Ultra portable? Check: I don't even think twice; If I'm carrying a backpack, my netbook is coming along for the ride. Durable? Check: Due care is required but, with solid state media and a protective sleeve, my netbook has suffered nary a ding. Excellent battery life? Well, there's the rub: Battery life is reasonable at a couple or few hours at the outside but this category is certainly in need of the most work. If you're in the market for one of these uber-portable PCs — and for what it's worth, we think netbooks deserve some serious consideration — we hope you'll find the In the Lab piece of use.

We have a host of helpful gadgets and gear to pack the most tech into the least space for the dorm room or other tight spot. If a netbook isn't the right choice for you, we offer tips for picking out and purchasing a laptop for heading back to school. We even get an update from the Electronic Entertainment Expo (E3) show floor. While the quintessential video gaming event has gone through a lot in its 14 years, it's still the best all-in-one-spot barometer for the industry and what's to come.

For students who can't quite get into the back to school mindset, we offer 10 top tips for working with Word that might get you started.

So, while gearing up to go back, we hope you find the information you're looking for in our pages. We invite you to visit www.hubcanada.com too, for full magazine archives, web-only feature stories and daily news and new product updates.

We hope you enjoy the issue,
Andrew Moore-Crispin
Editor-in-Chief

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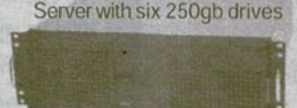

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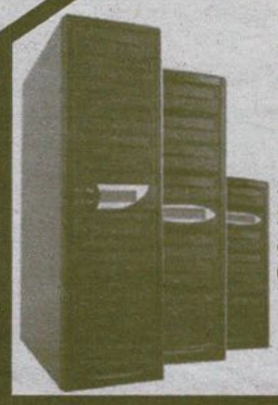

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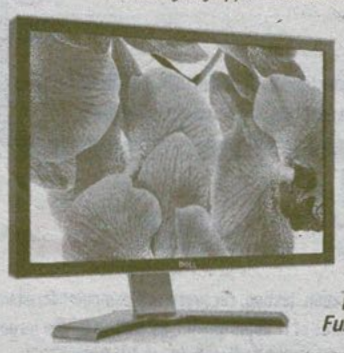

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The Ultimate Media PC build and contest

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In the next three months, we'll gather components for, build and benchmark a quiet, cool and powerful media PC. Follow along with the build process and grab the components list to build your own! At the end of the build, we'll be giving the Ultimate Media PC away.

Enter to win

the Ultimate Media PC from HUB: The Computer Paper starting with our October issue and online at www.hubcanada.com.

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By Dorian Nicholson
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Dell Declares Freedom Through New Lineup of Products
By Dorian Nicholson
Lightweight and portable, highly efficient and with more security than ever before. These are some of the highlights of Dell's new product lineup and their evolving purpose that they revealed to the public for the first time in mid-August.
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Breaking News:

Viruses on Facebook? Is Nothing Sacred?
By Dorian Nicholson
Recently hundreds of users have been the recipients of a worm which they accessed through Facebook. The virus was not actually on the site, but redirected members to the URL of the virus, either through wall postings or bogus video links.
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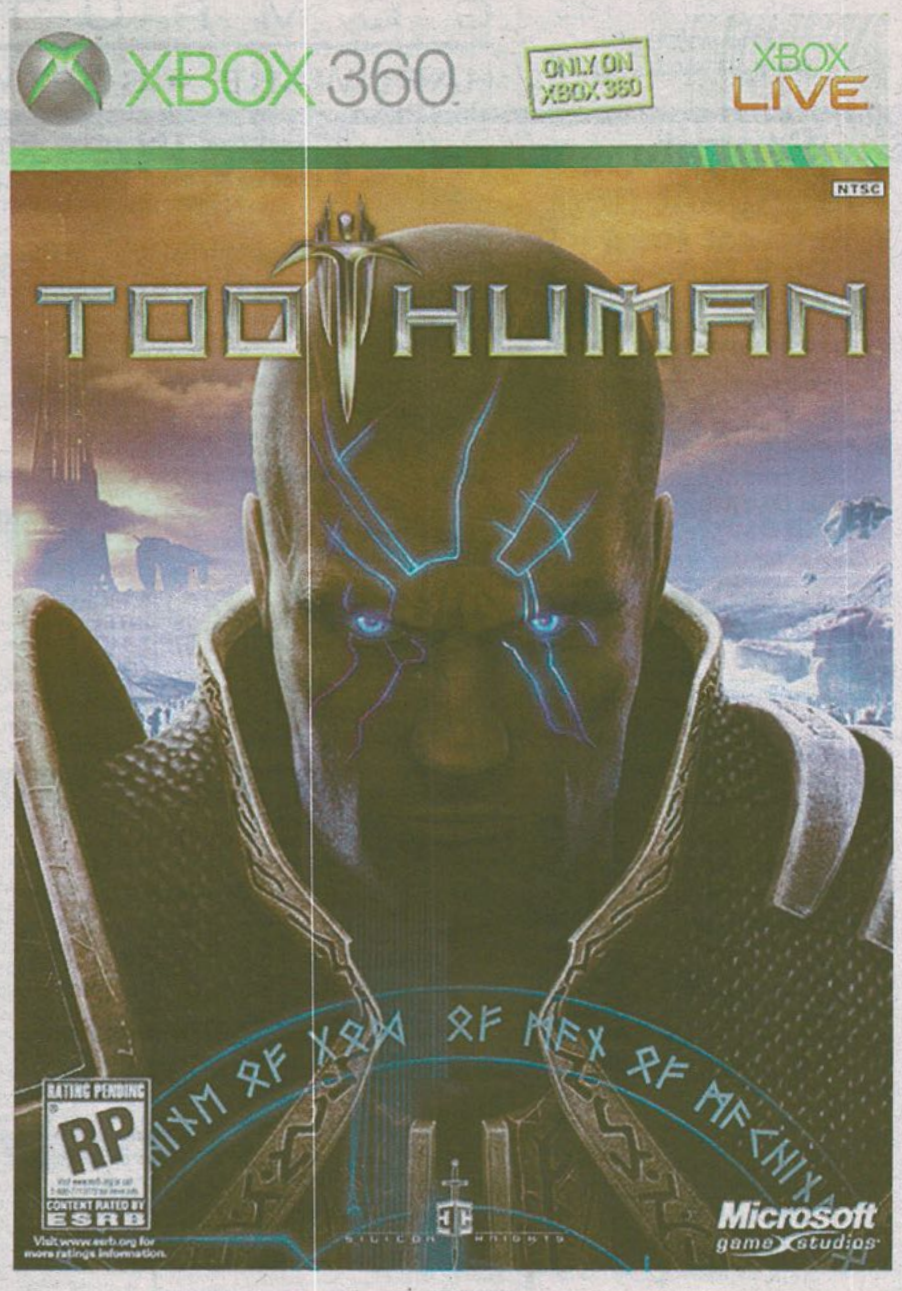

How to Get Kids Outside by Going Online
By Dorian Nicholson
While the Internet is a way for kids to waste time over the summer while they complain of boredom and lack of activities (all while chatting, gaming and downloading), a new site called AndyCamper wants to draw the attention of those children to the outdoors.
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Morodo Ltd. Offers Worldwide Discount Long-Distance for Cell Users
By Dorian Nicholson
London-based Morodo Ltd. has now increased the number of devices that are capable of using their Mo-Call application which allows users to avoid costly roaming fees overseas, while calling internationally for less all on their cell phones.
hubcanada.com/feed/395

Gigabyte Enters Distribution Agreement with Ingram Micro
By Dorian Nicholson
Gigabyte United Inc., one of the world's largest technology manufacturers specializing in motherboards announced earlier this month that they would be entering into a distribution agreement with Ingram Micro, a global leader in technology sales.
hubcanada.com/feed/393

Too Human: The Next Xbox 360 Hit?
By Dorian Nicholson
Microsoft Game Studios and Canadian developer Silicon Knights — best known for their Legacy of Kain and Soul Reaver games — are in the process of releasing a new game, "Too Human," and this one looks to be a hit.
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SilverBirch Studio's N+ Game Wins E3 Attention
By Dorian Nicholson
Toronto-based SilverBirch Studios has gained a bit of recognition on the global stage at E3 this year with N+. Also called N or N-game in its original form as a Flash game online, the wildly popular physics-based ninja platformer is now a PSP game.
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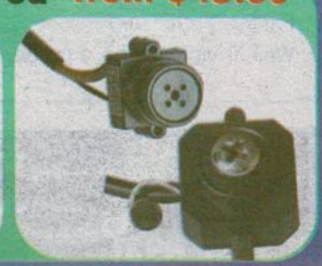

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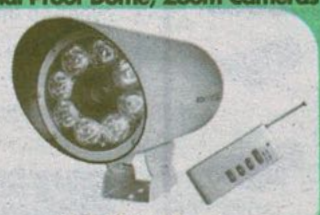

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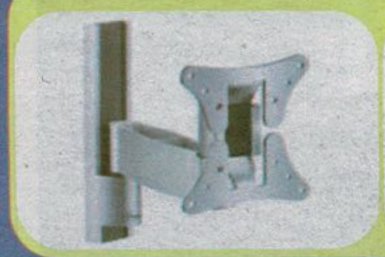

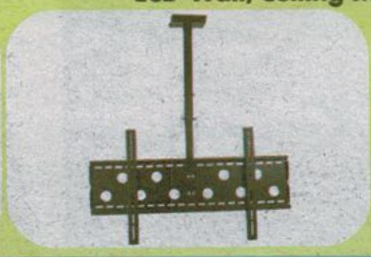

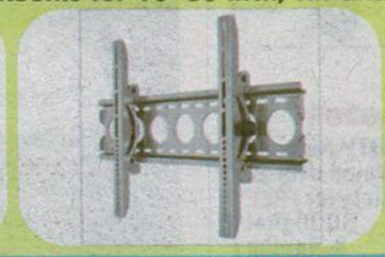

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Next Generation Mobility With Centrino 2

Intel's Centrino gets a full version product update

It's not an overstatement to say that the original launch of Intel's Centrino platform kicked the world of mobile computing up to the next level. True, previous notebooks featured powerful processors and built-in wireless networking. But it was Intel's decision to bundle the two together with a chipset and add special power management software that allowed users to hit the road knowing they had computing power when they wanted it, but with a battery runtime longer than half an hour when they were willing to opt for a more balanced power management scheme.

Now Intel has released the Centrino 2 platform, which is actually the fifth revision of the Centrino platform. And, at a quick glance, much of the new Centrino 2 platform appears to be speed increases for the components. So why is this one worthy of the full version upgrade number?

Faster, better, more

Well, it wouldn't be a proper launch for a tech product if there wasn't some element of faster-and-better, and of course the Centrino 2 delivers.

First off, the new Core 2 Duo processors that are included in the Centrino 2 bundle are faster than before, with speeds of up to 3.06 GHz, up from 2.4 GHz for the highest consumer model, and up from 2.6 GHz for the highest enterprise-level configuration.

These new processors also use a 45 nanometer manufacturing process. That means all of the components inside the processor are even smaller than before, allowing more efficient operation and even lower heat generation. For those keeping track of power usage, these new processors run at only 25 watts, which should help extend battery life over the previous generation of Centrino chipsets.

Teamed up with the new processors is a faster front side bus speed of 1066 MHz — the bus speed on the previous generation topped out at 800 MHz, but many members of the earlier Centrino family were 533 or 667 MHz. For those unfamiliar with what this means, the bus is the pipeline between the processor, chipset and RAM, and a faster bus means that information can move between these components more quickly, resulting in improved performance.

The new Centrino 2 configurations also make use of the newer DDR3 memory, which not only runs faster than most DDR2 configurations, but also uses a lower voltage. Again, this helps to increase power efficiency for the platform as a whole.

In addition to the processor and the chipset, the other main component that makes up the Centrino 2 bundle is the wireless networking component, and it was given a speed boost, too. At launch, Intel has opted for the 802.11n draft specification. That's not a huge surprise, since 802.11n is where the industry is headed, despite the wireless standard not quite being ratified yet.

While there's always the possibility that there will be major differences in the final version of the 802.11n wireless standard — which is not expected to be officially ratified until sometime in 2009 — most experts are betting that the current draft standard will only require minor tweaks to be fully compatible with the eventual standard. At the launch event an Intel spokesman confirmed that, should this be the case, upgrading to the final standard should be as easy as downloading a firmware upgrade.

More interesting is the announcement that Centrino 2 will support WiMAX later this year. This new long-range wireless technology is starting to be rolled out through many metropolitan areas in the US and Canada, and Intel's combo Wi-Fi / WiMAX chip will allow mobile users to connect to either type of wireless network.

Multimedia updates

While all of the updates listed above seem reasonably minor in the grand scheme of things — since previous updates to the Centrino line have increased the speeds and feeds too, after all — some of the additional updates to the chipset have earned this version of the product the "2" at the end of its name.

One of these new features is aimed squarely at the consumer: integrated hardware decoding of Blu-ray movies. What does that mean? Well, to play back a DVD of any kind, a computer has to convert the digital information found on the disk into a picture, and, up until now, the new high-definition formats have typically been decoded by the processor, which slows down the rest of the system considerably. By offloading that into a dedicated component designed specifically to convert AVC, VC1 and MPEG2 data into a video stream, it not only frees up the CPU to do more important things, it

Eden Mooly, VP of Intel's Mobile Platforms Group at the launch of Intel's Centrino 2 platform in San Francisco

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BFG GeForce GTX280 OCX w/ 1Gb (PCI-E) Video Out	$534.99
Sapphire X1550 w/ 256Mb (PCI-E) Video Out	$34.99
Sapphire HD3450 w/ 512Mb DDR3 (PCI-E) Video Out	$49.99
Sapphire HD3650 w/ 512Mb DDR2 (PCI-E) Video Out	$74.99
Sapphire HD3850 w/ 512Mb DDR3 (PCI-E) Video Out	$144.99
Sapphire HD4850 w/ 512Mb DDR3 (PCI-E) Video Out	$189.99
Sapphire HD4870 w/ 512Mb DDR3 (PCI-E) Video Out	$294.99

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Hauppage WinTV HVR-1250 TV Tuner	$59.99
Hauppage WinTV HVR-1600 TV Tuner	$94.99

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WD 300GB SATA/300 10000RPM Hard Drive w/ 16Mb	$314.99
WD 80GB SATA/300 7200RPM Hard Drive w/ 8Mb	$39.99
WD 160GB SATA/300 7200RPM Hard Drive w/ 8Mb	$49.99
WD 320GB SATA/300 7200RPM Hard Drive w/ 16Mb	$59.99
WD 500GB SATA/300 7200RPM Hard Drive w/ 16Mb	$79.99
WD 640GB SATA/300 7200RPM Hard Drive w/ 16Mb	$89.99
WD 750GB SATA/300 7200RPM Hard Drive w/ 16Mb	$139.99
WD 1TB SATA/300 7200RPM Hard Drive w/ 16Mb	$174.99

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Fujitsu 320GB SATA 5400RPM Hard Drive w/ 8Mb	$84.99
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WDC 320GB SATA 5400RPM Hard Drive w/ 8Mb	$109.99

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Sony 1.44Mb Floppy Disk Drive (USB)	$24.99
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Promise SATA2/300 TX4 Controller Card (PCI)	$69.99
Vantec UGT-ST400 SATA/300 Controller Card (PCI Express)	$39.99

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Kingston DataTraveler 1Gb Flash Memory, USB 2.0	$9.99
OCZ 2Gb Flash Memory, USB 2.0	$14.99
OCZ 4Gb Flash Memory, USB 2.0	$19.99
OCZ 8Gb Flash Memory, USB 2.0	$39.99
OCZ 16Gb Flash Memory, USB 2.0	$69.99
OCZ 32Gb Flash Memory, USB 2.0	$114.99
OCZ 2Gb Secure Digital Memory, 150x	$14.99
OCZ 4Gb SDHC6 Secure Digital Memory, 66x	$19.99

Flash and Brand Name Memory Also Available Online

Optical Drives

Sony 16X DVD-ROM Drive (Beige/Black)	$19.99
LiteOn 16X DVD-ROM Drive (Black) Serial-ATA	$19.99

Full List of Drives Available Online

LG GSA-H55N (18x Dual Layer DVD R/RW) (Beige)	$24.99
LG GH22NS30 (22x Dual Layer DVD R/RW) (Black) (SATA)	$29.99
LG GH22NP20 (22x Dual Layer DVD R/RW) (Black) (PATA)	$24.99
LG GH22LS30 (22x Lightscribe DVD R/RW) (Black) (SATA)	$34.99
LG GGC-H20L (Blu-Ray/HD-DVD) (Black) (SATA)	$149.99
Pioneer DVR-116 (20x Dual Layer DVD R/RW)(Beige/Black)	$29.99
Pioneer DVR-215 (20x Dual Layer DVD R/RW)(SATA)(Beige)	$34.99
Pioneer DVR-216 (20x Dual Layer DVD R/RW)(SATA)(Black)	$29.99
Plextor PX-820A (20x Dual Layer DVD R/RW)(Serial ATA)	$74.99
Sony Optiarc 7201A (20x DVD R/RW) (Beige/Black) (Parallel)	$29.99
Sony Optiarc 7201S (20x DVD R/RW) (Black) (SATA)(Lightscribe)	$29.99

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Soundblaster Audigy X-Fi Xtreme (PCI-Express) (OEM)	$49.99
Soundblaster Audigy X-Fi XtremeAudio (PCI) (Retail Box)	$69.99
Soundblaster X-Fi Surround 5.1 (USB) (Retail Box)	$54.99
Soundblaster Audigy X-Fi XtremeGamer (Retail Box)	$89.99
Soundblaster X-Fi Titanium Fatality Pro (PCI-E) (Retail Box)	$124.99
Soundblaster Audigy X-Fi XtremeGamer Fatality (Retail Box)	$139.99
Soundblaster Audigy X-Fi Fatality Champion (PCI) (Retail Box)	$169.99
Soundblaster X-Fi Titanium Fatality Champion (PCI-E) (Retail Box)	$174.99
Soundblaster Audigy X-Fi Elite Pro 55A(PCI) (Retail Box)	$274.99

Network Solutions

D-Link 10/100Mbit Ethernet Card	$9.99
D-Link Gigabit Ethernet Card	$24.99
TP-Link Gigabit Ethernet Card	$14.99
Asus WL-138G Wireless-G Ethernet Adapter	$24.99
Zio X9 Wireless-G PCI Ethernet Adapter	$19.99
Zio X7 Wireless-G USB Ethernet Adapter	$19.99
Linksys WMP54G - 802.11g Wireless Adapter PCI	$44.99
Linksys WPC54G - 802.11g Wireless Adapter PCMCIA	$44.99
Linksys WUSB54G - 802.11g Wireless Adapter USB	$49.99

Cables, Ends and Adapters are Available Online

SMC 10/100Mbit - 5 Port Switch	$19.99
TP-Link 10/100Mbit - 5 Port Switch	$14.99
D-Link DSL-2320B xDSL Ethernet/USB Modem	$69.99
Linksys BEFSR41 Cable/xDSL Router - 4 Port	$54.99
Linksys WRT54G2 Wireless 802.11g Router w/ 4 Port	$54.99
Linksys WRT54GL Wireless 802.11g Router w/ 4 Port (Linux)	$69.99
Linksys WRT310N Wireless 802.11n Router w/ 4 Port	$114.99
Linksys RV54000 Gigabit VPN Router w/ 4 Port	$129.99
TP-Link TD-8841 Router w/ 4 Port & DSL Modem	$34.99
TP-Link TD-W8920G 802.11g Wireless Router & DSL Modem	$54.99
Zio VII Wireless 802.11g Router w/ 4 Port	$34.99

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Antec NSK1380 Cube Case w/ 350W (mATX)	$114.99
Antec NSK4480 Mini-Tower w/ 380W (mATX)	$94.99
Antec NSK4480B Mini-Tower w/ 380W (mATX) Black	$94.99
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Thermaltake Armor VA8000BWS Black ATX Case	$149.99
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LianLi PC-60A Plus II Aluminum Case (ATX) Silver	$164.99
LianLi PC-60B Plus II Aluminum Case (ATX) Black	$164.99
Nspire R-318 Case w/ 350W (ATX) Beige	$39.99
Nspire M-120 Mini - Case w/ 350W (mATX) Black	$49.99

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Economy 250W ATX Power Supply	$19.99
Antec Quattro 1000W True Power Power Supply	$219.99
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Enlight 450W Power Supply w/ 2 fans	$59.99
Enermax EG565P-VE Power Supply w/ 2 fans (All-In-One)	$74.99
Enermax Galaxy DXX 850W Power Supply	$214.99
Enermax Galaxy DXX 1000W Power Supply	$239.99
Enemax Liberty 400W Power Supply (Modular Connectors)	$74.99
Enermax Liberty 500W Power Supply (Modular Connectors)	$94.99
Enermax Liberty 620W Power Supply (Modular Connectors)	$124.99
Enermax Modu82+ 625W Power Supply	$144.99
Nspire ISO-500D 450W Power Supply w/ 2 fans	$39.99
OCZ 600W GameXStream SLI Power Supply	$94.99
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Zalman ZM750-HP Quiet 750W ATX12V v2.2 Power Supply	$154.99
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Barebone Systems

Shuttle SG31G2B4KV1 (Socket 775) w/ G31 Chipset	$234.99
Shuttle SN68PTG6 BK (Socket AM2) w/ NVidia nForce 7025	$334.99

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Viewsonic VA1926wb - 19in 16x10 LCD	$194.99
Viewsonic VX2240wm - 22in 16x10 LCD	$274.99
Acer X173WB - 17in 16x10 LCD	$154.99
Acer X193WB - 19in 16x10 LCD	$169.99
Acer X223WBD - 22in 16x10 LCD	$199.99
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Acer X263WBI - 26in 16x10 LCD	$414.99

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EEEPC 901 (32GB SSD, 1Gb Ram, Ebony/Pearl, XP Home, 8.9" screen)	$694.99
EEEPC 1000 (40GB SSD, 1Gb Ram, Ebony/Pearl, Linux, 10" screen)	$694.99

**Not all models are available in all colors

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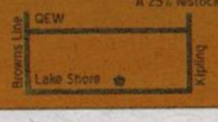

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saves on the battery too. To that end, Intel believes they've met their goal: the ability to play an entire feature-length Blu-ray movie on a single battery charge.

Switching up your video

One new feature aimed at power users is the inclusion of switchable graphics capability in selected configurations. Each Centrino 2 configuration will come with standard integrated graphics as a part of the GM45 Express chipset. Typically though, mobile configurations aimed at power users or gamers tend to add a discrete 3D graphics component that's more powerful than the very basic integrated component. The downside though, is that more powerful graphics components often eat up a bunch of power, even when the computer isn't doing anything particularly demanding.

Enter switchable graphics: on a computer that supports this new feature, a power user can actually specify which graphics component to use. That means that when you're done playing a game, you can manually switch your graphics from the high-powered ATI (or potentially nVidia) graphics chip over to the integrated Intel graphics, which will save you precious battery life. Then, when you're ready to start gaming again, you simply switch it back. It takes a few seconds for the switchover, but those few seconds of waiting are well worth the minutes you'll save on your runtime.

Rollout

At the July launch event for Centrino 2, there were already over 240 design wins announced, and almost certainly those will add up by the week. By the time you reading this, models should be starting to hit retail from manufacturers like HP, Acer, Sony, Toshiba, Lenovo, Fujitsu, ASUS and more.

Models that include the new Centrino 2 technology will all sport the new Centrino 2 logo.

By Sean Carruthers

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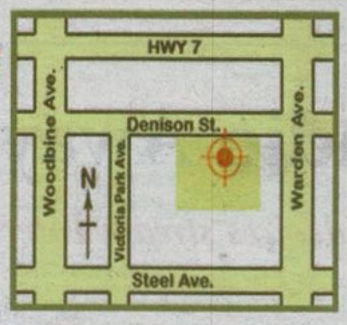

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Internet Radio Away From Your PC

Standalone devices stream Internet radio anywhere

Getting Internet radio from the computer nook to the living room, kitchen, den or garage has long been the plight of the connected stereophile. While it's always been technically possible to connect your PC to your stereo directly, doing so is far from the most elegant or flexible solution. There are stereo components that can accept Ethernet or even connect via Wi-Fi but they're often prohibitively expensive.

The draw for Internet radio is that it gives us the ability to spin across a global band of tens of thousands of radio stations, from America to Zimbabwe and all stops in between. In a country like Canada, built on immigration and with citizens from all over the world, this is likely a major draw for adoption here: you can catch the evening news from Malaysia first thing in the morning or the soccer match from England in the wee hours.

Enter the Revo line of Internet radio receivers. Small and versatile, these wireless receivers make Internet radio anywhere (that is, anywhere there's an accessible Wi-Fi connection) a reality, whether in the den, the kitchen or the back yard. These small but powerful Internet radio receivers offer access to over 11,500 Internet radio stations (at last count) and are continually updated as new stations come online. The three major product entries satisfy different subsets: Pico Wi-Fi is the most portable of the bunch with its rechargeable battery and built-in speaker, the iBlik is a stand-alone solution designed to stay in one place and also to act as an iPod dock, and the Mondo is a diminutive add-on for your existing hi-fi system and relies on your home stereo (or a set of headphones) for sound output.

Revo's Internet radios are available in Canada through small retailers as well as Bay Bloor Radio, Future Shop and London Drugs.

Pico Wi-Fi
www.myrevo.ca
$329.99
Dimensions: 105 x 167 x 105mm (WxHxD)
In the box: Guide, power supply, M-Port connection cable, Pico Wi-Fi radio

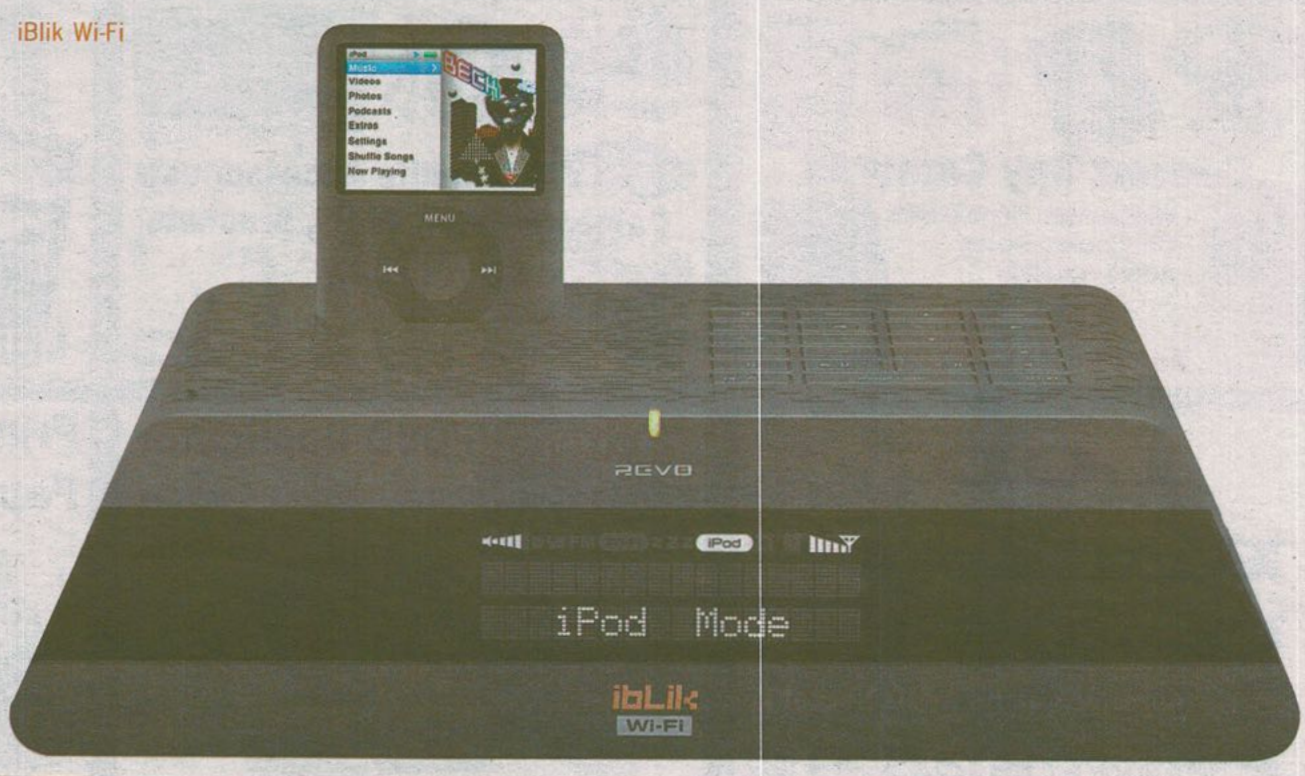
This standalone Internet radio box incorporates a two-inch driver and six watt amplifier as well as a nickel metal hydride battery pack which means it can be used anywhere you're in range of the home Wi-Fi connection. In addition to streaming over 10,000 Internet radio stations to wherever you are, it can also connect to your digital audio player or other sound source to act as a loud speaker using the M-Port connection and can receive standard FM broadcasts. Also, the Pico can stream music from your home PC making it a truly versatile stand-alone sound system. While the relatively small speaker won't rival your home hi-fi system, its small size, promised 8-hour battery life and optional remote control make it way more flexible.

Internet radio stations are displayed on the black high-contrast LCD display and can be broken down by country, by type or by genre of music. It also supports "Listen Again" service, when it's available on the broadcaster side.

iBlik Wi-Fi
www.myrevo.ca
$249.99
Dimensions: 255 x 70 x 120mm (WxHxD)
In the box: Guide, power supply, M-Port connection cable, IR remote, iBlik Wi-Fi radio

With a sleeker, more squat style than the Pico and given its clock radio functionality, lack of a battery and both Wi-Fi and wired LAN connection options, the iBlik is designed to be used in one place as opposed to moved all over the house. It's perfectly suited as a secondary sound system in the

iBlik Wi-Fi



home office, den or living room and its clock radio functions mean it could be equally at home on your bedside table.

The iBlik differs from its predecessor, Blik (Blik, $199.99), in that it has an iPod dock sitting at the top left of the unit. This offers full control over the iPod and charges the device. No other DAPs are supported though so Zune, Sansa or other player owners will have to use the M-Port connector cable and do without the DAP control and charging.

Mondo Wi-Fi
www.myrevo.ca
$199.99
Dimensions: 130 x 48 x 179mm (WxHxD)
In the box: Guide, power supply, RCA connection cables, IR remote,
Mondo Wi-Fi radio

The Mondo Wi-Fi is an excellent link from your home stereo to your PC and in addition to the over 11,000 radio stations available, it can stream audio stored on a PC or Mac straight to your hi-fi over your wireless connection.

This diminutive radio receiver easily connects to your home stereo using the included RCA cables. While audiophiles would likely prefer a more recent and high fidelity digital connection, the current audio quality of streaming Internet radio from the source means these RCA cables will be more than sufficient.

As a simple and inexpensive means to connect your home stereo to your PC without stringing wires all over the place, the Mondo is a winner. And that's not even the main reason to consider it. Bringing streaming radio from literally all over the world, organized by genre or by country is the major selling point.

Like its brethren, the Mondo supports Listen Again services where available, allowing users to catch a program they may have missed after the live broadcast has aired.

By Andrew Moore-Crispin

Pico Wi-Fi

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Back to School Laptop Buyer's Guide

Choosing the right PC for back to school

Good news for students expecting the inevitable back to school computer upgrade: there's never been a better time to buy a new PC.

Not only are computers becoming incredibly powerful and packed with convenient features — such as wireless connectivity and memory card readers — but prices are at an all-time low.

What's more, PCs are also replacing other home technologies these days, including stereo systems (thanks to MP3s and Internet radio stations), telephones (thanks to webcams and embedded mics) and televisions (thanks to broadband video).

Despite being slightly more expensive than their stationary desktop counterparts, laptop computers (also referred to as "notebooks"), are better suited to a student's lifestyle since they can bring the computer with them anywhere — be it a university lecture hall, study session in the library or in and around the home (or dorm room).

But choosing the right laptop to match your needs and budget can be an overwhelming task. The following should help you decide what's best for you and your budget.

Portability/Battery

When you're shopping for a laptop, keep in mind the bigger the screen (e.g. 17-inches as opposed to 12-inches), the bigger the laptop will be.

A larger monitor also tends to add more weight and drain the battery faster than smaller screens. This shouldn't be as much of a concern for those whose laptop will be used as a stationary desktop replacement, which will be plugged into a wall's electrical outlet for its power. Tablet PCs, which let you write on the screen with a stylus pen, will also be smaller and lighter in design than a traditional laptop, but tend to cost more.

Power/Performance

Today's laptops can often stand up to their desktop counterparts in speed and performance. In other words, there is no longer such a clear trade-off between power and portablility. That said, look for a laptop with a "dual-core" processor, which is like having two engines under the hood instead of one. And the more system memory, or RAM, the smoother your programs will work (and the easier it will be to multitask); go with one gigabyte (1GB) of RAM at a bare minimum. 2GB or more of RAM is even better, especially when running Windows Vista. Video memory (such as 128- or 256-megabytes) relates to graphical performance, important for games or video editing; the bigger the number, the smoother those applications will run.

Hard Drive/Optical Media

When it comes to the size of a hard drive, which is how many programs and files you can fit on your laptop before it runs out of space, be sure to get a laptop with at least a 160GB hard drive. Also be sure your laptop includes a built-in CD/DVD burner that can record to "dual layer" discs, which refer to blank DVDs that can hold up to 8.5GB of data (about 2,500 songs). A DVD drive can also be used to load software, watch movies or play computer games. Also be sure to pick up an inexpensive USB memory stick which can be used to quickly copy files from one PC to another.

Windows vs. Mac

This is very much a personal decision, but the best way to tell which one is ideal for your needs is to try both out to see which one feels more intuitive for you to work on and which one will work with your favourite programs. Macs are generally more expensive than Windows Vista-based PCs, but they're more stylish and are less prone to threats in cyberspace such as viruses, spyware and hackers. On the flipside, however, Windows users have a far greater selection of software (including many more PC games). Keep in mind that today's Intel-powered Macs can also run the Windows operating system.

Wireless

Most laptops purchased today ship with integrated wireless networking features. This means you can log onto the Net at broadband-like speeds when in range of a Wi-Fi network, be it at home, the office or one of the thousands of "hotspots" around the country, including hotels, airport lounges, school campuses, cafés, and so on. The latest laptops offer 802.11n Wi-Fi technology which offers the fastest speeds and the widest range so you don't need to be as near the wireless router when compared with earlier standards. That said, the older built-in 802.11g is also fine for most web surfing, online gaming and streaming video.

Bells and whistles

While they typically add to the cost, optional laptop features include: built-in webcams (with microphone) for online video chats, fingerprint readers (for extra security), high-end speaker systems with bass and simulated surround sound, integrated cellular connectivity to surf the Net using your cell phone plan, multiple USB ports to attach numerous devices, wireless remotes to control all of your media from across the room and multiple colours to choose from as offered with the latest Dell, HP and Sony models.

By Marc Saltzman

HP Pavilion dv2800t Artist Edition Notebook PC

The Growing Cost of Cyber Crime

By Harry Powell

A new study by Telus in partnership with the Rotman School of Management released last month shows that IT security breaches are costing publicly traded Canadian companies an average loss of more than $637,000 annually.

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Samsung Announces SP-Series of Projectors

By Dorian Nicholson

Samsung Electronics Canada has just announced its latest line of multimedia projectors, the SP-series. These new products are made to be even more versatile and compatible with modern computing equipment and operating systems.

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Nissan Canada Helps to Recycle Computers and Cut Down on Waste

By Dorian Nicholson

World Computer Exchange Canada has just received its largest ever single donation. Nissan Canada Inc. donated 198 computers recently, 128 desktop computers, 136 monitors, and 70 laptops, all of which will go to a developing country in Africa.

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A Cuil New Way to Search

By Dorian Nicholson

A well funded start-up is taking a run at Google's seeming strangle hold on search. This new search engine, going by the name Cuil (pronounced 'cool') claims to have over 120 billion web pages indexed — more than three times as many as any other engine.

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New Products:

Telus Puts its Jewels on the Table with the HTC Touch Diamond

By Dorian Nicholson

The Diamond, released on Aug. 14, will come with a broad range of features, including a 2.8" hi-res VGA screen, integrated Wi-Fi, Bluetooth capabilities, 4GB of internal memory as well as Windows Mobile and Office Mobile functionality.

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Studio Hybrid Announced by Dell

By Dorian Nicholson

Late last month Dell launched the Studio Hybrid, a new computer that continues Dell's trend of trying to preserve the environment as a top priority. And with its compact size, the Hybrid takes up less space in the workplace or computer room.

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Dell Brings Precision

By Harry Powell

It would seem that Dell is taking on blade workstations with the introduction of the Dell Precision R5400 rack workstation. The company also announced the

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The Doctor is in

Here's your chance to send your PC woes to our resident Techspert, the HUB PC Doctor

Dear HUB PC Doctor,
Today I received 600 unwanted emails, all the result of "spoofing." Some spammer gave MY email address as their return address, and email servers from all over the world sent me these 600 "failure" messages when they received emails addressed to nonexistent or nonfunctioning email addresses. What should I do about this? I'm afraid a lot of email servers might start rejecting my legitimate emails because of this spammer's activity. Thanks for any advice!
Maxwell

Hi Maxwell,
It is very common for spammers to use spoofed return addresses. Thankfully most server-level anti-spam products aren't designed to block mail based on the sending mail address automatically. The designers of these products know how easy it is to spoof the sending mail address, so there is little value in blocking it. Normally anti-spam software will look at several characteristics of the email message before identifying the mail as spam. You may, however, want to notify your ISP that this spoofing occurred, but only if the mail account is provided by your ISP.
There are a few things you can do to make it less likely this will happen again:

- Ensure your anti-virus software is up to date. Most spam servers today are compromised Windows PCs being used remotely as part of a spam network.
- Have an account set up specifically for activities that might expose your email address. Whenever you provide your email address online you risk having it sold, or made available to spammers. Setting up a free account (Gmail, Hotmail, Yahoo all work fine for this) to use when engaging in this sort of activity prevents your actual e-mail address from being distributed.
- Don't ever post your real email address online (i.e. in a public forum). There is software that automatically scans the Internet for e-mail addresses.

If you know for a fact that legitimate e-mail that you are sending is being blocked you really only have two choices. Either you can contact the administrators of the mail server that is blocking you to try and have them permit your mail through their mail server, or you will have to create a new e-mail address.

Dear HUB PC Doctor,
I'm having an issue with both Internet Explorer and Mozilla Firefox. The browsers work for a short time and then without any notice I will get the page cannot be displayed error. It's not a provider issue as I can use my PSP and PS3's browsers to access the web when this problem occurs but the only thing that fixes it is to restart my PC. What should I do?
Ben F

Ben,
Troubleshooting this kind of issue can be difficult. There are several things that could be causing the issue, but you've isolated it to your computer, or your computer's connection to your router.

If your computer connects to your router wirelessly, try plugging your computer directly into your router. If the Internet connection works without issue try reinstalling the drivers for your network card — ensure you get the latest by visiting the manufacturer's website.
If your computer has a wired connection to your router there is usually a green link light on the network card and on the router. Make note of the light configurations when your connection works, and when it doesn't. If it is different either the network card is bad, or the port on the router is bad. Try switching to a free port on the router or swapping ports with one you know works. Also try using a different ethernet cable. Be careful not to disconnect anything from ports that are labeled WAN or uplink.
If the problem persists you are either encountering a problem with Windows (likely malware related), or a hardware issue. You can do the following:

- Ensure you are running some form of malware protection like SUPERAntiSpyware Free (www.superantispyware.com) or Microsoft Windows Defender (www.microsoft.com/athome/security/spyware/software/default.mspx) with the latest definitions, and have scanned recently.

- Ensure you are running an antivirus application with the latest definitions and have done a virus scan recently. You can get free anti-virus software here: free.grisoft.com/

- Replace the potentially faulty network component in the PC ($10-35 for a wired network adapter, $30-80 for a wireless network adapter)

If you're uncomfortable opening your PC, you should bring it to your local computer shop. They should be able to diagnose and repair a network adapter related issue for less than $150. If there is something wrong with Windows, it may be more costly to fix and a fresh install of Windows may be in order.
Before working on your computer, or taking it in to the shop ensure you back up all important data to some sort of removable storage like CD or DVD.

Dear Doc,
Lately my computer has been acting up. I have two 3.5" hard drives, and for no reason at all my D:/ drive disconnects itself. This is an internal hard drive. It also makes a beeping noise. But the weirdest thing is that it reconnects itself later on. Sometimes in a few seconds, sometimes in minutes or even hours.
I don't think it could be virus, spyware, etc. so the only thing left is hardware failure, right? This problem starts when we insert a USB peripheral. I've checked all the connections to the hard drive and nothing is loose.
Thank you for your time,
Dark

Hey Dark,
Based on your description of the problem I recommend backing up all important data on that hard drive as soon as possible. Once it is backed up I wouldn't advise saving anything on it until you haven't had any problems with the drive for several days.
It is possible that the addition of the USB devices could be consuming enough power that your hard drive is spinning down. Try removing the USB devices and see if the hard drive continues to spin down. If it doesn't then your power supply isn't providing enough voltage to your PC's components and needs to be replaced. As power supplies get older they tend to become less reliable, and as their temperature goes up they are able to supply less power. Many brand name manufacturers (Dell, HP, etc) put in lower wattage power supplies because they can be quieter. These power supplies are often not the same size or have different motherboard connectors than consumer power supplies so if you have a brand name computer contact the manufacturer. If you choose to replace your power supply you can add 100 watts to whatever your current power supply is rated for and you should be okay — assuming all the other hardware is remaining the same.
If you determine that the power supply is fine then you should backup and replace the hard drive.

Simon Bolduc is the purveyor of PC Doctor wisdom. Submit your questions to the HUB PC Doctor by emailing pcdoc@ppublishing.ca.

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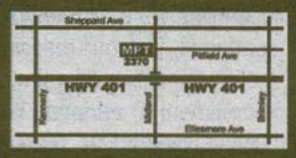

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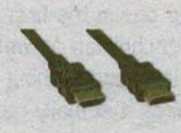
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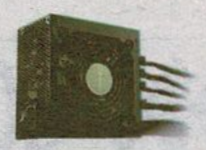
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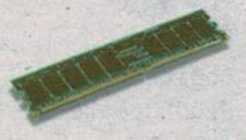
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Go to School Naked

Online learning means school is where the Net connection is

One of the great advantages of online courses is that you can show up to them completely naked and you won't be thrown in jail.

Another huge advantage to online learning — you can be just about anywhere. (Though outside your own home it would be a good idea to be clothed.)

Fancy taking a philosophy course from the University of Oxford? There's nothing stopping you even if you are a long-haul trucker based out of Spuzzum, BC. In fact, you'd be hard pressed to find a university without at least a few classes available online.

Not only can you be pretty much anywhere, you can start class at any time. If you are a night owl, have a changeable work schedule or other considerations, you can still make it to class.

Given this flexibility, it's no wonder that Statistics Canada reports that over 1.5 million Canadians used the Internet for distance education in 2005. Another report from the Sloan Consortium in the US shows enrolment for online courses growing at a rate over six times faster than traditional courses.

This leads to the question — why are schools still offering regular classes at all?

So I still have to go?

There are a few reasons for this. Lack of faculty acceptance is a common one. In my research, job security, perceived quality issues and a lack of incentives were all mentioned as objections. In academia, it's your research that gets you hired, not setting up online courses. This is cited as an impediment to adoption in the Sloan Consortium's "Online Nation: Five Years of Growth in Online Learning" report.

Another reason online courses don't get offered is the expense of creating one in the first place. There has to be at least one technician as well as additional instructor preparation time and training to move the course online. This makes it actually more expensive than a regular class, at least in the initial phases.

Finally, the most critical barrier cited by chief academics in this report was that students needed more discipline to succeed in online courses.

With all the reasons that schools come up with for not putting courses online, the real downside to a potential student right now is that you may be able to find lots of single courses available but it's still hard to find complete programs offered solely online. If even one course from your studies isn't offered then you have to physically go to the institution. Spuzzum to Oxford isn't a cheap trip and taking time off work is even more expensive. If you find a truly online program then there are still a few gotchas. For example, you may be able to be naked but you'll be alone. If you need to be motivated by strict disciplinarian teachers such as the ones many chief academics expect you need, ideally with a sharp tongue and perhaps even a whip, then online courses may not be for you. Conversely, if you get dragged into an all-night kegger every time you get within 100 metres of campus then you might live longer if you go online.

Another issue is that you have to learn how to use a course management system and know your way around a computer reasonably well. If you've used bulletin boards and uploaded and downloaded a thing or two on the Net then you should be in good shape. Also, you are reliant on the school's server to be up and your own Internet connection and computer to be working. This is not usually an issue but exams are commonly time limited and if something dies, you've got some fast talking ahead.

The last gotcha is the fact that not everyone learns English from a book as well as Manuel from Fawlty Towers. If your learning style is more auditory or you require a quick back and forth discourse to cement an idea, then online courses aren't your bag.

But classes chafe me off

Now that I've failed to talk you out of taking an online course you have a big conundrum ahead — which school? While choosing, watch out for something called a diploma mill. It is a fake school that offers a credential based on little or nothing. You don't have to take tests or go to class, you just pay your money and get your credential. There is actually a cat with an MBA from Texas. Apparently it's qualified to be president.

This sounds great but you can't say you have a legitimate degree in Oregon without committing a crime. That's right: not only is the diploma mill committing a crime, you are too by saying you have a real degree. Oregon may be a bit ahead of the curve but it's a trend. New Jersey and North Dakota have similar laws. Canada doesn't seem to have quite the problem that the US does. I could only find two diploma mills cited on the Oregon Office of Degree Authorization's website based out of Ontario, but seven out of B.C. According to the Oregon site California, Idaho, Florida, Hawaii, Alabama, Mississippi and Colorado all allow dubious degree granters to run fairly unfettered. Diploma mills aside, learning on the Internet is convenient to the point where it's sometimes your only option. If you work, have kids or are a dedicated nudist, you can continue to work towards the credential of your choice without going to class.

I have no class and you can too.

By Andrew Carruthers

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From the Floor at E3

What's hot in video games? Music, co-op and sequels

The 14th annual Electronic Entertainment Expo, or "E3" — the world's premiere video gaming convention held each July — once again served as a glimpse into the future of the multi-billion dollar interactive entertainment industry.

Media, retailers and analysts packed the invite-only industry event held at the Los Angeles Convention Center to play games coming soon to a platform near you.

On that note, E3 '08 was less about the "console wars" between Sony's PlayStation 3, Microsoft's Xbox 360 and Nintendo's Wii, and more about the video games themselves — most of which are available on multiple systems anyway.

And after playing more than 100 games over the three days, it's easy to see key trends shaping up in the video game industry. Here's a look at a few big ones.

Co-op play

First there were single-player adventures against A.I.-controlled enemies. Then along came head-to-head online matches, which evolved into team-based competitions. Today, many game publishers are giving players the options to play with — rather than against — friends, either in front of the same TV or online.

Co-op is showing up in everything from first-person shooters, such as Microsoft Game Studios' Gears of War 2 and Sony Computer Entertainment America's (SCEA) Resistance 2 (both of which are due out this November for the Xbox 360 and PlayStation 3, respectively) to role-playing games such as Capcom's Resident Evil 5 and Microsoft's Fable 2 to puzzle/platformers including the ingenious LittleBigPlanet from SCEA for the PS3.

Some games, including Ubisoft's upcoming Prince of Persia sequel, make co-op a main game-play component, though in this case the Montreal-based developers let the player only trigger the co-op sequences rather than controlling the prince's partner's moves.

Music games

Speaking of co-op, music games such as Guitar Hero III: Legends of Rock, Guitar Hero: Aerosmith and Rock Band are a very popular pastime for friends to jam together in front of the same television on any of the big three consoles or over the Internet (with Wii owners left out of the online mix).

E3 showed the next installments of these huge franchises — namely, Rock Band 2 from MTV Games and Electronic Arts (EA) and Guitar Hero: World Tour from Activision. Technically speaking, Activision wasn't part of E3 this year but they held their own media events near the convention center.

Rock Band 2 (for Xbox 360, PlayStation 2/3 and Nintendo Wii) will feature newly-designed instruments including quieter and wireless drum kit; extra solo and multiplayer game modes such as a "Battle of the Bands" online competition between super groups and will let you import most of the original Rock Band tracks.

All 80 or so songs included in Rock Band 2 will be from the original master recordings as opposed to remakes or re-recordings of popular songs. The game includes some special treats including Guns 'N' Roses' new track, "Shackler's Revenge," from the highly-anticipated album "Chinese Democracy."

Similar to Rock Band, the upcoming Guitar Hero: World Tour will also allow gamers to form a band to play in front of the same TV or online, with all-wireless instruments. A new single-player Career mode lets players swap instruments as they progress through the story (or choose to stick with one), while the "Battle of the Bands" mode allows up to eight players to compete online against others.

When it debuts in November, Activision's Guitar Hero: World Tour will also add a Music Studio music creator tool that lets players compose, record and edit their own rock 'n' roll anthems, and then import these tunes into the game or share them over the Net.

And whenever there's a genre-busting game like Guitar Hero, clones are never far behind, looking to cash in on the new trend. E3 was full of them including THQ's Battle of the Bands, Konami's Rock Revolution and Nintendo's Wii Music. Singing games are also red hot, such as the latest SingStar games from SCEA and the just-announced Lips, for Microsoft's Xbox 360.

Sequelitis

Disappointingly, this year's E3 also saw few new original intellectual properties (IPs) — instead there were plenty of sequels. At least video game sequels tend to be as good as (if not better than) their predecessors — which is more than we can say about Hollywood movies.

Some of my top picks for best games at the show include Bethesda Softworks' Fallout 3, Capcom's Resident Evil 5, MTV Games/EA's Rock Band 2 and SCEA's Resistance 2.

Some impressive original IPs, however, include a handful of games from EA including the life simulation Spore (which should be out for the PC and Mac near the time you read this), the first-person action-adventure Mirror's Edge, and a creepy first-person survival horror game, Dead Space. SCEA's LittleBigPlanet (due out in October) and Sony Online Entertainment's massively multiplayer online role-playing game, DC Universe Online (for PS3, PC), also looked great.

By Marc Saltzman

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Get Wired

The well appointed dorm room

Back to school. Hmm... who among us can honestly say they didn't dread the thought of hearing those three words at this time of year. But whether you're a student or a person who shops for a student, we have a few ideas that might make this whole back to school concept a little more palatable. Here then is a look at some of the coolest — and often some of the smartest — tech and electronic gear for the bedroom homework zone at home, the dorm at college and the student in all of us.

PC or not PC

For students working in particularly cramped spaces or flitting about hither and thither, laptops/notebooks (detailed in the Back to School Laptop Buyer's Guide in this issue) are a more sensible choice of computer than a PC. Yet when power is the name of the game and future upgradeability is factored in, the good old PC definitely still has its place.

HP's line of Media Center PCs is a good bet in a name brand desktop for demanding students who need oodles of storage space, sufficient power for all their graphical requirements, and a full roster of ports and connections. Top-end models such as the HP Pavilion Elite m9360f ($1,599.99 MSRP, without monitor, www.hp.ca) not only deliver all of the above but also allow users to watch ultra-high-definition Blu-ray movies, create high-capacity Blu-ray data disks, and operate everything with a nifty remote control.

But you're certainly not limited to name brand systems. Reputable online tech distributors such as NCIX (www.ncix.com) and independent computer shops all across town stock every part you need to create any desktop your heart desires. The obvious advantage is that you get to choose each component that goes into your machine, thus besting ready-built machines that may be somewhat wanting in certain areas. The obvious disadvantage is that you have to undertake the research and the actual labour of building your own PC.

If upgradeability isn't so much of a factor, you may want to consider today's breed of all-in-one PCs. As the description suggests, the bar-none best feature of an all-in-one is just that — everything that makes the computer do what a computer does is located in a compartment in the rear of the monitor. The space-gobbling tower of yore is no more! The downside is that some of the components may be quite difficult to change out as technology moves ahead.

In Dell's recently released and highly lauded XPS One ($1,500 - $2,400 MSRP, www.dell.ca), the upsides include a 20-inch high-definition screen, a fast Intel Core Duo processor, a minimum of 2GB memory (RAM) and an integrated microphone and 2.0 megapixel camera. The high-end model also features a Blu-ray drive, a 500GB hard drive and an HDTV tuner (read more on TV tuners later in this article). If ease of use is paramount, there is no equal — all the multimedia keys and display controls are situated on the monitor, and you'll never, ever, need to reach below the desk or some other annoying location to access ports, drives, and card readers. Dell has even included a little remote control to make everything that much easier.

Hard copy

A printer is just as much a necessity now as it was when the promises of a paperless office were first being bandied about nearly three decades ago. But what student desk has room for a full-blown printer when it also may need to provide space for other hardware peripherals such as scanners, copiers, and the like? Not to mention all those textbooks!

Answer: Very few. But don't worry — today's space-saving multifunction printers do it all (printing, scanning, copying and often faxing), and many of them do it well. Inkjet printers are certainly priced more affordably, and they do a great job with photos and other images. Lasers cost more initially and are physically larger, but

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they're faster, generally more reliable over the long term, and the cost per page works out to be quite a bit lower.

In the inkjet realm, one could do much worse than HP's Photosmart, Brother's MFP line, Canon's PIXMA, and Lexmark's and Epson's All-In-One series. All five lineups are extremely deep, with nifty options such as wireless operation, borderless photos, built-in LCD screens, and memory card slots scattered throughout. Which particular model will suit the student in your life really depends on his or her individual needs, though we like the PIXMA MP520, the Lexmark Z1420, and the Photosmart C4480 for their features to price ratios. Each will set you back between $100 and $150.

In the laser multifunction department, look toward products such as the stunningly inexpensive yet highly rated Brother DCP-7020 ($120, www.brother.ca) and Samsung SCX-4200 ($200, www.samsung.ca). Neither one sports the array of features of the above inkjets, but both will handle basic all-in-one functions at much more agreeable consumables costs.

Spike stopper

Before you set up the computer and the printer, do yourself or your student a favor and invest in a surge protector. Most often shaped like a standard six-outlet power bar, a surge protector does just that — protects against power surges and spikes that could cripple your electronics. Surge protectors are rated in terms of joules, with a 1,000-joules (1 kJ) rating being the standard accepted benchmark. APC and Belkin both manufacture reliable surge protectors that begin at about the $30 mark.

Powersquid (www.powersquid.com) offers a pricier yet compelling solution that incorporates not just an extremely high joules rating but also a gaggle of breakout outlets (they look like tentacles), thus affording ample room for those cumbersome power bricks that come with some electronic devices. Prices range from $30 to $70. Regardless of your final selection, look for a unit with a "connected equipment" guarantee.

TV? Who needs one?!

Do we really need an actual television set gobbling valuable real estate in a room already cluttered with scholastic paraphernalia? Probably not, especially because any computer monitor gets us halfway there. Let's look at a couple of alternatives.

The most obvious is a TV tuner card or chipset. If you're lucky enough to have a PC or notebook with such a device pre-installed (Toshiba's Qosmio line of notebooks, for example), you already have everything you need. If you don't, consider ATI's TV Wonder 650 ($140 street price), through which you can watch regular cable TV, listen to FM radio, watch and author DVDs, check out high definition TV, and even record stuff to your hard drive. One potential problem: This is an internal unit designed only for desktop PCs.

If the thought of popping open a computer box doesn't thrill you, or if you have a laptop rather than a PC, external cards such as Hauppauge's WinTV-HVR-950 ($90, www.hauppauge.com) will do the trick. It supports many of the same features as the internal ATI card above, yet it installs in seconds in any unoccupied USB 2.0 slot, including those on a notebook.

Still, you'll need some form of TV signal for either of the above. If even that is in short supply, look at Sling Media's Slingbox ($120 to $250, www.slingmedia.com). This nifty little gizmo allows you to watch your home TV virtually anywhere — even on your notebook or mobile phone — via the Internet. You merely connect the Slingbox unit to your source TV and an Internet-capable network, and then control what you watch remotely via the included software. Moreover, you'll never have to pay subscription fees.

On guard for thee

Say you quit watching your Slingbox long enough to take your notebook over to the library to complete your latest project. You get up from your work to visit the restroom, and return just a few minutes later to find a bare table where your computer once resided. Welcome to the low-tech world of campus thievery.

If you'd used the Kensington Microsaver Notebook Lock ($80, www.kensington.com), the criminal mastermind behind said theft may have passed your computer by in favour of another, unprotected one. The Microsaver attaches to the security slot found on most notebooks and — hopefully — acts as a deterrent to would-be evil-doers. Granted, overly enthusiastic crooks could conceivably yank on the notebook until the innards break open, but then they'd have a useless product on their hands.

Another option is the Belkin USB Laptop Security Alarm ($110, www.belkin.com). The device works on the theory that thieves will think twice before trying to steal a notebook when the very act of stealing it will trip a very loud, very annoying siren. Seems like a good theory to us, unless of course your notebook happens to be miles from where anyone can hear that alarm.

Late night comforts

What do you do if you want to shed a little light on your laptop (assuming it wasn't stolen as per the previous scenearios) or cool yourself down when there's someone else in the room trying to grab a few hours of shut-eye? You could harness the power of your USB ports.

From Boynq comes the Mistral USB Ventilator ($20, www.boynq.com), a small but useful personal fan that connects to a USB port, whirs away at 10,000 rotations per minute, and can be twisted about to face any direction you fancy. It's not exactly big, but it moves enough air to take the edge off and it looks cool doing it. More illuminating is the Targus Laptop USB Light PA015U ($15 street price). Though it won't light up a room — which is a good thing in a dorm or bedroom — it'll brighten up your keyboard just enough that you can see it. And it doesn't look all frilly or silly like some USB lamps.

Get a hub, bub

What with digital cameras, digital music players, USB keyboards and mice, backup drives, peripherals and game controllers, PDAs, media devices and so much more, you can never have too many USB ports. But seeing that most laptops (surely the most popular computer choice in the student realm) aren't equipped with an overabundance of the ports, a USB hub is a virtual necessity.

We have three for your consideration. The first, and certainly the best fit of the lot for those with a ton of USB-centric peripherals, is the D-Link DUB-H7 7-Port USB 2.0 Hub ($40, www.dlink.com). With seven ports, you'll be hard pressed to reach its full capacity. It's self-powered too via the included power adapter, so it'll accept just about anything regardless of the power requirements, and it houses all its ports on a single side so you don't have cords running out at all angles.

If space is an extreme priority, Logitech's Premium 4-Port USB Hub for Notebooks (street price $30) might do the trick. It connects to the back of the computer and hangs there like a little dongle, offering four non-powered slots for your USB devices.

The third and priciest of the bunch is the Logitech Alto Connect Notebook Stand + 4-Port USB Stand ($50, www.logitech.com). As the name suggests, it's more than a mere hub. Sure, you get three high-speed, powered USB ports and a single non-

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powered port, but the device is also a notebook stand, elevating and angling your computer toward you so it's easier on the wrists during those extended computing sessions. And it looks spiffy to boot.

Tunes, and more, to go

Clearly the de rigeur personal music system despite there being so many solid alternatives on the market, Apple's iPod can be so much more than an aural traveling companion. It can be the center of a dorm room party too, and Logitech's Pure-Fi Anywhere iPod Speaker ($120, www.logitech.com) is one of the best docking stations for just such an environment. Not only does it look cool and oh-so-suave, but it manages to squeeze a lot of high-grade amplification and sound into a truly slim, space-efficient design. You can find smaller systems, and you can find more powerful systems, but this is a fine middle ground.

But what about those iPod alternatives? Microsoft's Zune is one, and it's no slouch. The user interface is easy to use, the sound quality is great, and the upscale 80GB model ($220, www.zune.ca) holds a ton of music, movies and podcasts. However, there's one model in Creative's critically-acclaimed Zen series of MP3 players that looks to be a natural for students. It's called the Creative Zen V Plus ($90, www.creative.com), and it's definitely worth checking out. It's inexpensive, it's extremely compact, it plays video and FM radio, and, perhaps best of all, it has a built-in voice recorder so you can take notes from the latest lecture.

But even the most adept MP3 player can only do so much. And with the very recent launch of Apple's iPhone 3G — the first iPhone legitimately, commercially available in Canada — and the price reduction that accompanies it, the question of a smartphone's value on campus is once again revisited. Do you really want a digital music player, a quasi-tablet PC, a digital camera, a cell phone, and Internet browsing in one, stylish unit? Of course you do! Particularly now that the 3G is here in this country, bringing with it an awesome interface, improved network data speeds, and GPS capabilities.

Remember though, that while the iPhone 3G may be half the price ($200 vs $400) of its forefathers, you'll need to sign up for a plan that could set you back anywhere from fifty to a hundred (or more) dollars every month... for a couple of years, no less. Are you ready for that kind of commitment?

Take it with you

Life on campus without a backpack or some form of carryall has been well nigh impossible ever since the introduction of the first textbook. But with a whole bunch of textbooks and a laptop to lug around, a solid backpack is essential. "Solid" being the operative word here.

Unless you have a hankering for a permanent hunchback or a pair of separated shoulders, choose a pack with wide straps and some form of shoulder padding or shock absorption. A waistband is almost mandatory when lugging those massive loads, as are multiple, logically organized compartments for all of your stuff. Extra padding in the laptop compartment is always a good thing, as are rainproofing and reflective materials. Whether you need wheels will depend on your personal workload, but word is that wheels are the modern equivalent of the pocket protector.

There's no shortage of backpacks from which to choose, though most everything from Targus, JanSport, Samsonite, and Timberland will stand the test of time. We particularly like the SwissGear Synergy ($90, www.wengerna.com) for the simple fact that it gets rave reviews from almost every student who's owned and used it. And it doesn't hurt that it's made by the same folks who brought us the Swiss Army Knife. Mobile Edge's Select Backpack ($50, www.mobileedge.com), which arguably looks even slicker and is certainly designed to organize all the electronic and hardcover goodies you'll ever have, is another top-notch choice.

Poindexter alert!

For certain students, calculators are far from passé. And there are few better than Texas Instruments' Voyage 200 ($200, www.ti.com). According to TI, it boasts the "most powerful handheld functionality" of any of its units, which means it should be enough for most anyone. It's bigger than the standard calculator, with a QWERTY keyboard and a high-resolution display and more advanced math and geometry software than any self-respecting math whiz will ever need. It's also upgradeable through your PC or notebook.

Gizmo central

The cute factor is high with Belkin's Mouse Trap ($20, www.belkin.com). Most of the time it'll lie there on your desk as a mouse pad. But when you need to take your work elsewhere, it zips up and acts as a carrying bag.

The LeapFrog Fly Fusion Pentop Computer ($80, www.leapfrog.com) is truly a pen that puts other pens to shame. Featuring a tiny computer inside its slightly larger than average housing and an even tinier camera in the nib, the Fly Fusion essentially reads handwriting and turns it into text you can then edit on a PC. Great for taking notes during class or lectures, the Fly Fusion is no one-trick pony. It'll also spell-check your work, solve equations, provide English-French translation, and even play MP3s.

The caveat? In order for the Fly Fusion to do its thing, you must use specially-designed Fly notebook paper dubbed Flypaper... get it?

By Gord Goble

A Survival Guide to Twitter

Navigating the micro-blog with the Net's newest buzz-word

It can seem as thought there are countless ways for people to communicate on the Internet, and that's not too far from the truth. Between blogs, instant messaging, Facebook and Myspace, and other popular social networking services (to say nothing of email and VoIP), there are so many ways that you can get in touch with your friends, family and colleagues, that it can make your head spin.

Into this crowded marketplace came Twitter (www.twitter.com), the first major player in a new category that's come to be known as "micro-blogging." It's micro because your updates are limited to only 140 characters of text, or the same amount of information in a standard cell-phone text message.

What's the point, anyhow?

Well, the point is the point. As in, GET to the point. The sheer amount of information out there can quickly become overwhelming to the average user. Sure, a site like Facebook is a one-stop shop for people to share their latest interests and activities, but the site is also a bit of a sprawl. People add applications, those applications bulk up the size of the page, and all of a sudden you're getting a zillion spam messages from people who have decided to make you part of their entourage, or to send you drinks, hugs, turn you into a zombie, a ninja or a zombie ninja.

While that type of social interaction is perfectly acceptable for teenagers (or those with a lot of time on their hands), many other people will quickly lose patience and with it, interest.

That's why a micro-blogging platform like Twitter can be a real boon for people who want to actually accomplish something with their day: instead of a sprawling page loaded down with smileys, music and "Thanks for the Add!" messages, you see a page with a tidy list of recent updates from your contacts, in reverse chronological order. If you want to see what one particular contact has been up to, you click their name and you'll see nothing but their updates. It's clean and efficient.

Get a client

Off the bat, one of the downsides of Twitter was that you had to go to the Twitter webpage to see what was new, which would force you to take a detour from whatever you were currently doing. In that regard, it was little different than any of the other social networking sites, but the problem was quickly addressed when Twitter opened up their API. That allowed clever programmers to connect to Twitter's database and pull the raw data straight into an application of their own design.

The upshot: instead of taking a break from writing up your business proposal, you could have an application like Twitteriffic or Twhirl running in the background on your system, with the option of popping up an alert when you received new incoming "tweets." Time spent checking new messages: a second instead of a minute.

Even better, moving this from the web (complete with HTML overhead, graphics and other such bulking agents) to a client-based application, it suddenly makes Twitter friendlier to mobile users worried about the amount of data being transferred back and forth.

The spam problem: There isn't one.

One charge that's been repeatedly laid against Twitter is that the small number of characters allowed for each update leads to one of two things:

Utter banality of content (for example, an update that reads "Peeing!," "Bored," or "OMG my cell phone provider SUXXXX!1!").

Carpetbombing from people who like to continue their thoughts in subsequent updates, so that when you finally check messages, all you see is content from them.

That's spam, right? Well, not so fast. One real key advantage with microblogging sites like Twitter and Pownce is the ability to have asymmetrical relationships — unlike sites like Myspace and Facebook, you don't have to be friends with everyone who is friends with you.

The key to getting rid of content that you don't particularly want to read is simply to unsubscribe from repeat offenders by hitting the "unfollow" button... even if you only do it temporarily. It's worth noting that even if you unsubscribe from their updates, they'll still be able to follow yours if they choose to, so it won't be quite as awkward as when you remove a friend on Facebook.

In short, the key to staying spam free on Twitter is to only follow people whose updates you find interesting.

Business opportunities (for big and small alike)

If you think that Micro-blogging is just for friends to keep tabs on each other, think again: there are a growing number of businesses that are starting Twitter accounts. For example, an employee of telecommunications giant Comcast has set up an account simply to monitor complaints about the company's service, and to respond to them offering to help. (www.twitter.com/comcastcares)

The campaign of presidential hopeful Barack Obama has also been on top of this new method of staying in touch with supporters, offering updates on his events for the day, and pointing to new multimedia content on his campaign website. (www.twitter.com/barackobama)

Oh, and you can always use your Twitter account to announce when a new episode of your podcast is out (www.twitter.com/labratstv).

The key to making Twitter a useful part of your business is to be a good neighbor on the site: don't simply go online and then start sending out one commercial message after another. Offer information. Interact with your followers. Deal with complaints. Heck, even give your followers a tip-off to special deals at your online store. The key, as always, is moderation.

By Sean Carruthers

Twitter survival strategies

If you have a lot to say, avoid spreading your thoughts over a series of updates. It's spammy. Instead, write a blog post, and then post a Twitter update pointing to that single blog post.

Unsubscribe from people whose content you're not finding useful. You can always re-subscribe later, and it won't prevent them from reading your posts if they want to.

Use moderation — while there's certainly plenty of room for personal observations that may or not be earth-shattering, nobody needs to know that you're heading to the toilet, or to know what song you're listening to every time you change tracks on your iPod.

If you're looking for opinions on something in particular, ask! Even people you don't know might weigh in on your message with something useful!

If you're worried about your privacy, remember that you can always "protect" your updates so that the only people who can see them are people who you are friends with.

Use a URL-shortening site like tinyurl.com or is.gd to compress lengthy web addresses into something that will fit easily into Twitter's 140-character limit, with room to spare.

Some Twitter alternatives

As with all successful online services, there are followers either trying to steal a bit of the limelight by offering a similar service or by improving certain aspects of the spoofed service.

Identi.ca (www.identi.ca)

Despite its popularity, one of the key downsides of Twitter is that it's a proprietary system — when it goes down (as it has been known to do during high-traffic periods), users of the site are stranded. Because of that, an open-source alternative called Identi.ca was started. It not only allows users to share their updates between other services, it also allows users to take the source code and start their own open-source micro-blogging site!

Jaiku (www.jaiku.com)

One of the first competitors for Twitter, Finland's Jaiku conceived of the service as a dashboard, allowing you to follow other Jaiku users' updates, but also allowing you to see other content from around the web by integrating your favourite RSS feeds into your profile. It's since been picked up by Google, which hasn't done much to tinker with it yet.

Pownce (www.pownce.com)

Started by some of the same team that brought you Digg, Pownce aimed to expand on the format by removing the 140-character limit, allow the posting of links and even small files. Sure, it risks losing the simplicity that's made Twitter popular, but it does provide for a much richer experience for those who want more than simple text updates.

In the Lab: Computing in the Clouds

Netbooks tread the line between full laptop and Internet-only device

The best possible notebook isn't necessarily the one with the most power, the one with the biggest and brightest screen or the one with the largest sticker price. The best possible notebook is the one that does exactly what you need it to do, that's always with you and that finds the perfect balance of price and performance, considering your needs.

If, like many people, your needs when away from your desk are fairly minimal, confined mostly to word processing, email, Internet and light multimedia, the perfect notebook to meet your needs may be part of a fairly new category, loosely called "netbooks."

Far from the loaded gaming laptops from the likes of Alienware, Voodoo and others that pack in performance to spare with a pricetag to match, netbooks are small form factor PCs that keep the system specs down and have a tempting sticker price to show for the sacrifice. It is a category popularized by ASUS with its revolutionary Eee PC, an inexpensive notebook not much wider than a DVD case and a few times as thick. Running a specially designed Linux distro, the Eee PC is the benchmark by which early competitive entries into the category are judged.

A race to the bottom

A $500 pricetag seems to be the netbook sweetspot, and it's a price manufacturers strive to meet or beat. It's the tipping point at which a netbook represents good value; anything more than that and you might as well move up to a fully featured laptop with an optical drive, more memory, faster chip and a larger, often brighter screen.

The New York Times recently reported that major PC manufacturers are hesitant to enter the netbook market because the margins on netbooks are so low. That hasn't stopped some major players — Acer for example, with a Dell netbook apparently also nearing launch, and Toshiba and other majors dabbling in the market away from North American shores — from jumping in to the fray.

Alongside the usual race to the top — notebooks packing in as many high-end features as is humanly possible — there's a race to the bottom. This race sees manufacturers creating notebooks that have just enough power to do the things most users need to do in a small and infinitely portable package, inexpensive enough that we might consider it as a supplemental laptop, a kid's notebook or even a tech toy.

We had an opportunity to check out a few of the major entries in the netbook category. While a head-to-head comparison via benchmarking is out of the question given that these diminutive PCs run different operating systems, there are some significant usability differences we can comment on.

HP Mini-Note 2133 PC

Price: $499 - $829
Price as tested: $749
Dimensions: 260 x 160 x 30mm (WxHxD)
Weight: 1.31 kg

Specs as tested

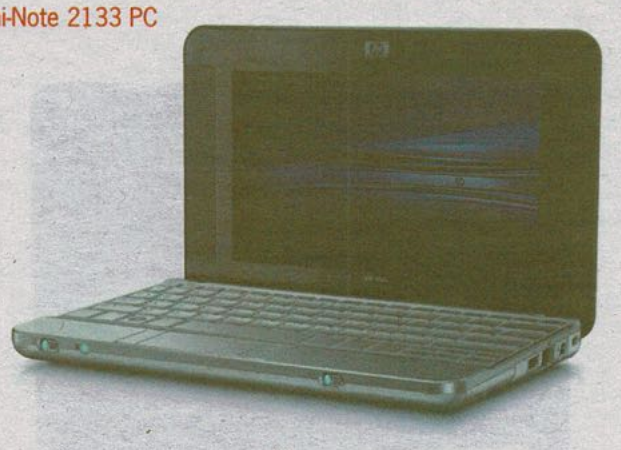
Operating system: Windows Vista Business Screen size: 8.9-inch
Processor: Via C-7M 1.6GHz ULV RAM: 1GB
HDD: 120GB Battery life: 3-cell (tested) ~2-2.25hr (6-cell also available)
Ports: 2 USB 2.0, VGA, Ethernet, SD card reader
Connections: Ethernet, 802.11a/b/g, Bluetooth

HP's Mini-Note 2133 entry in to the netbook category is a notable one, no pun intended. It is potentially the most expensive of the notebooks tested — the fully decked out Mini-Note PC with Windows Vista Business and 2GB of RAM nears $830, which is not bad in the realm of full-sized notebooks but steep bordering unheard of in the netbook category. In fact, given its full Windows Vista operating system as tested, its high price relative to other entries in the category, up to 2GB of RAM and 120GB hard drive, it isn't so much a netbook as it is an ultra-small notebook without an optical drive. It's also the heaviest of the books we looked at, though it's certainly the most stylish of the bunch.

The Mini-Note PC is included here though as it does have a solid-state drive version available, running SuSE Linux for just under the $500 sweet spot.

Our test machine, running Windows Vista Business suffers under the weight of its

HP Mini-Note 2133 PC



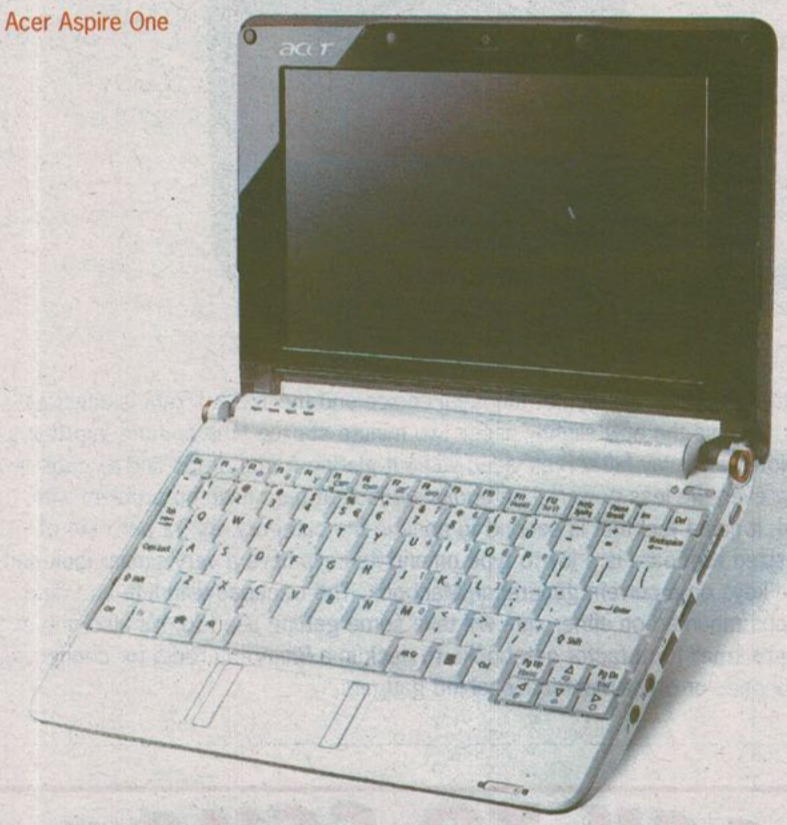
charge; the Via chip is clearly not the ideal choice and the 1GB of RAM is only just sufficient. Witness the only slightly under two minute startup time and the fact that the Mini-Note can't play full-screen video without glaring frame drops and hiccups — something even the less powerful netbooks we look at here have no problem with.

That said, it has a feel that is second to none in the category. Its 92 per cent of standard-sized keyboard is a joy to type on and its keys have a very similar look and feel to the keys on a current generation Macbook. The trackpad with left- and right-click buttons mounted on either side will take some getting used to. It's also one of the few ultra small form factor notebooks to pack in a Bluetooth radio for connecting with cell phones or other Bluetooth-enabled gadgets.

Other neat touches include a touch-sensitive volume slider bar and a one button charge monitor that is a part of the included battery. Press the button and four LEDs let you know how much of a charge your battery holds without having to boot in to the system. Its screen is also the brightest and, with its glossy plexiglass covering, perhaps the safest of the machines we're looking at. Its brushed aluminum chassis with rounded corners is beautiful to hold and behold and protects the innards.

In short, Mini-note 2133 with a Linux operating system is a potential winner — though we haven't had a chance to see it up close and personal. However, a Mini-note 2133 loaded with Vista, with a Via processor and 1GB of RAM is simply not up to the task.

Acer Aspire One



Acer Aspire One
Price: $350 - $450
Price as tested: $350
Dimensions: 249 x 170 x 29mm (WxHxD)
Weight: 0.99 kg

Specs as tested
Operating system: Linpus Linux Screen size: 8.9-inch, 1024x600
Processor: 1.6GHz Intel Atom N270 RAM: 512MB
HDD: 8GB SSD Battery life: 3-cell (as tested), ~2.5hr (6-cell also available)
Ports: 3 USB, 1 5-in-1 card reader, 1 SD card storage expansion slot
Connections: Ethernet, 802.11b/g

The Acer Aspire One gives a nod to the original netbook, the aforementioned ASUS Eee PC with its one-click, dumbed down (not necessarily in a bad way) operating system and overall design. It's about as light as the original Eee PC, clocking in at just under 1 kg, but packs in a more usable 88 per cent of standard keyboard. While I'm more comfortable on a standard-sized desktop PC keyboard, I found the Acer Aspire One easy and enjoyable to type on. The disconcerting split mouse button trackpad (as seen in the Mini-Note PC where left and right click buttons are mounted to either side of the trackpad) takes some getting used to but isn't altogether a bad thing. You may find yourself tapping the trackpad and echewing the buttons more than usual, however. The trackpad itself is quite small but is up to the task of moving the cursor around the 8.9-inch screen without interruption.

As with many of the recent netbook entries, the Acer Aspire One as tested opts for a solid state drive (SSD). We tested the 8GB model. Up to a 120GB standard hard drive is available and the slick little PC also comes in dark brown, navy blue, white or pink, running either Linpus or Windows XP.

One really forward-thinking touch is that the One has two card slots: one to act as a standard card reader for pulling pics from your digicam or moving files from one computer to another and the other to act as a sort of hard drive upgrade. Slide a card in to the slot marked "Storage Expansion" and you can add disk space without plugging up your only SD card slot.

The Acer Aspire One boots to home screen from a full power off in less than 22 seconds and, in our tests, had a browser window up with my (locally hosted) homepage up in 32.4 seconds.

If you have a copy of XP kicking around, putting that on the Aspire One is a fairly simple task, assuming you have an off-board optical drive. A pre-loaded XP version of the Aspire One is also available.

Pre-loaded applications include the OpenOffice.org suite, several games of little entertainment value, a webcam program to tweak the 1.3 MP webcam in the top centre of the LCD bezel, browser, email, messenger, and so on. In other words, all the standards are present and accounted for. That's a good thing, given that the OS is hobbled by the one-click home screen and finding or adding new programs will be beyond the casual computer user's scope. You can open a terminal window within the file management window to add software repositories and programs... if you've used Linux before. However, the instructions that come with the Aspire One really should cover this topic for newbies. Also, while a large and dedicated tweaking community has sprung up around the ASUS Eee PC, there's little in the way of Aspire One "hacks" to be had at present.

Also consider that the root password isn't available unless you do a full reset to factory by downloading a restore DVD (which itself is easier said than done).

I would like to see netbook makers — not just Acer — that offer Linux OSs on consumer laptops offer files to create a bootable USB restore disk on their support sites.

MSI Wind U100-030CA
www.msi-computer.ca/
Price as tested: $550
Dimensions: 260 x 180 x 31.5mm (WxHxD)
Weight: 1.0 kg

Specs as tested
Operating system: Windows XP Home Screen size: 10-inch, 1024x600
Processor: Intel Atom 1.6GHz N270 RAM: 1GB HDD: 80GB
Battery life: 3-cell (as tested) ~2hr (6-cell also available)
Ports: 3 USB, 4-in-1 card reader
Connections: Ethernet, 802.11b/g Bluetooth

The latest Wind from MSI is another notebook incorporating Intel's Atom line of ultramobile processors. It runs Windows XP and opts for a spinning SATA hard drive as opposed to the solid state disks that typify the netbook concept. What we get is more like an ultra small form factor laptop than a netbook in the traditional sense.

As a primary laptop, the Wind is a sufficient though under-powered relative to others in the entry-level notebook category. That said, where the netbook concept generally assumes you have another computer or computers (even a full-sized laptop) for more demanding use, that's not so much a requirement with this particular model from the Wind line. Running Windows XP and offering a fairly substantial 80GB for file storage, the Wind could even be an ideal choice for a school-bound student to use as a primary PC while away from home, assuming said student isn't a power user.

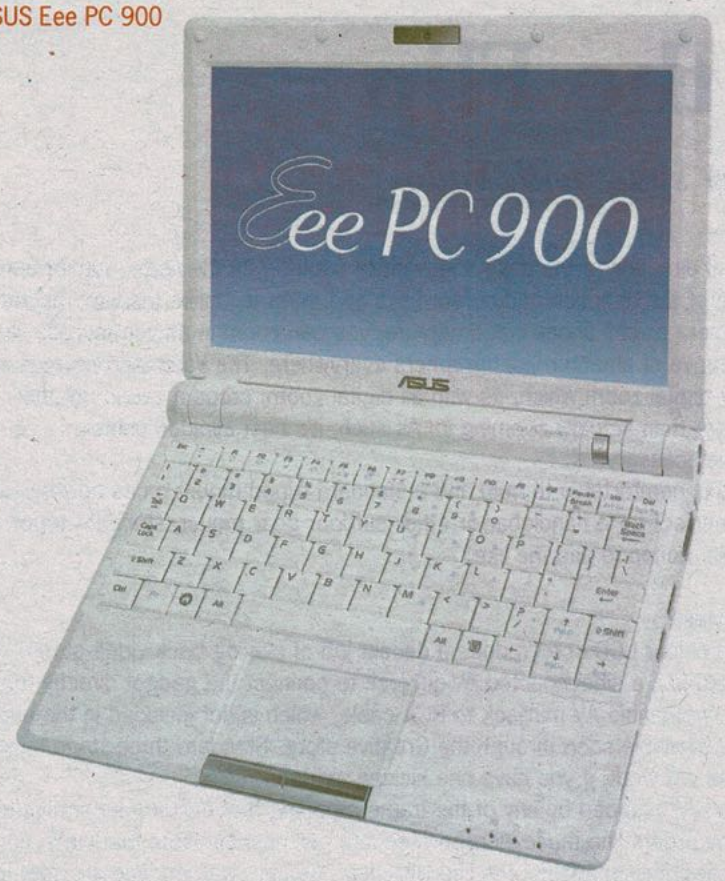
The fact that it's in the high end of the price spectrum for netbooks and the low end for laptops makes it a good compromise between the two categories.

With on-board Bluetooth, the Wind scores points with the connected set. With this wireless link you can hook up to other Bluetooth devices to transfer files and connect to your data-enabled cell phone to act as a wireless modem when out of Wi-Fi range.

The Wind comes with a white carry case that, while horrendously ugly (in this writer's opinion, an opinion confirmed by this writer's significant other) looking like a

MSI Wind U100-030CA

ASUS Eee PC 900



cross between an oversized wallet and a 1980s gym bag, is still a nice bonus and a good way to protect your investment when travelling. This padded, zippered sleeve can also fit the power adapter.

The keyboard on the Wind is comfortable to type on with a key feel and travel that's the nicest of the netbooks we've gotten hands on with. Its 10-inch, 1024 x 600 LCD LED backlit screen is the biggest in our roundup and, while the resolution isn't any greater than other netbooks we've looked at, the extra real estate means bigger screen fonts and icons so it's easier on older or tired eyes.

There is no Linux OS version of this particular model of MSI Wind, but even running Windows XP we were able to cold-boot to desktop in about 39 seconds with a browser window and locally hosted homepage in 47 seconds.

Curiously, MSI doesn't seem to offer any battery life specs for this model of the Wind. We were able to get about two hours of use out of the Wind's three-cell battery before it gave up the ghost. Not bad, all things being relative, but certainly not great. A six-cell battery version is coming soon and should offer twice the battery life.

ASUS Eee PC 900
www.eeepc.asus.com
Price: $450
Dimensions: 225 x 35 x 165 (WxHxD)
Weight: 1.0 kg

Specs as tested
Operating system: Windows XP Home Screen size: 8.9-inch, 1024x600
Processor: Intel Celeron M ULV 900MHz RAM: 1GB
HDD: 12GB (4GB on-board SSD + 8GB PCI-E mini SSD as two volumes)
Battery life: 4-cell (as tested) ~2.5hr Ports: 3 USB, SD / MMC card reader
Connections: Ethernet, 802.11b/g

From the company that arguably started the netbook trend (dedicated, non-PC form factor gadgets like the Psion Series 5 aside) comes the second generation Eee PC, this time with the 900 model number. Where the first Eee PCs (700 series models) opted for a 7-inch screen that, while usable, required us to do a lot of side-to-side scrolling of web pages and documents, the 900 has an 8.9-inch screen at 1024x600 resolution. In other words, no more side-to-side scrolling in standard web pages.

Using the same general chassis design and slightly cramped but still very usable keyboard as the original Eee PC, the build quality feels good and the larger screen makes a huge difference.

While opting to use Windows XP in the Eee PC 900 may seem a strange choice, it is one of the most robust and stable operating systems to ever come out of Redmond and its system requirements are more in line with the netbook product category. So, while the 900 uses an Intel Celeron chip running at 900MHz rather than the more ideally suited Intel Atom chips we've seen in other netbooks In the Lab, it is up to the task. Proof is in its 30 seconds to boot to desktop and another 18 seconds to open a browser and load my locally hosted web page.

The Eee PC 900 incorporates a 1.3 MP webcam and microphone in the bezel above the LCD screen. Gone is the black left and right flanking plastic that hid the speakers in the first-generation Eee PCs. Instead, the speakers have been moved down to the bottom of the chassis. As a result, sound is somewhat muffled when resting on your lap.

The white power adapter that comes with the Eee PC 900 does away with the all-in-one power supply that the previous model used. However, it's still the smallest of the AC adapters from the netbooks we've looked at here.

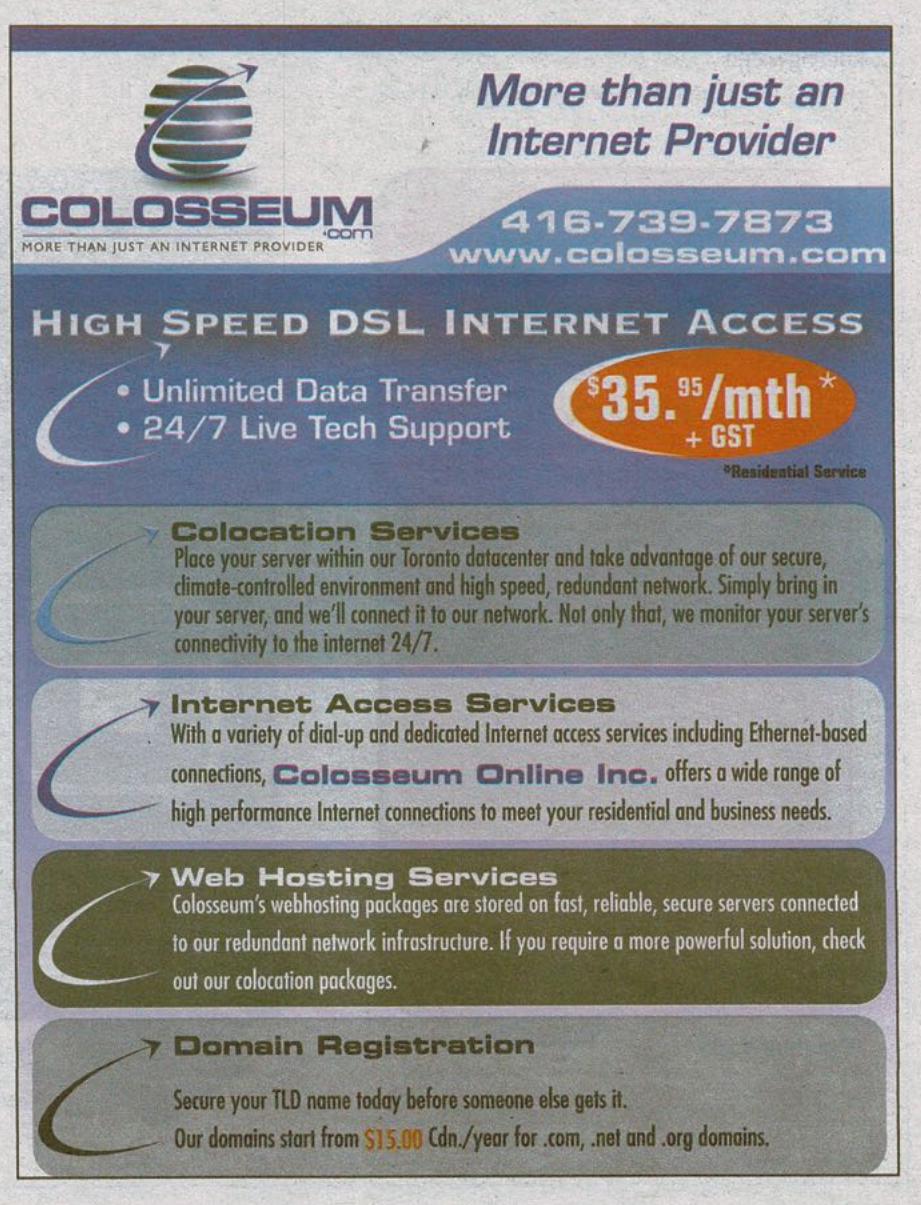
Under the category of really nice bonuses, the Eee PC 900 is only one of two netbooks we looked at that include a case. Unlike the monstrosity that ships with the MSI Wind book, the demur grey padded envelope style case that comes in the box won't net you strange looks when you pull your netbook out at Starbucks. It also does a great job of protecting your investment from dust, dings and scratches (but certainly not drops) while in transit.

And the winner is...
Acer Aspire One

While the netbook category was kicked off with ASUS's Eee PC and we fell in love with the idea, there was plenty of room for improvement. With a less toy-like look, a larger screen (no more side-to-side scrolling of web pages), an Intel Atom processor and innovative touches like the easily expandable storage via SD card expansion slot, glossy black bezel, webcam that actually functions as a webcam (the first Eee PCs' didn't), the Acer Aspire One isn't the first in the category, but it's no doubt the best we've seen. Clocking in at about $350 for the base model and going to just over $450 for the loaded model with Windows XP, the Acer Aspire One offers choice within this particular model without risking the confusion that ASUS has wreaked on the market with its seemingly hundreds of different Eee PC models, often with only subtle differences between model numbers and price points.

This is the netbook that I'll be buying. I'd advise opting for the 6-cell battery though as battery life is the 3-cell-sporting Aspire One's Achilles heel.

By Andrew Moore-Crispin



Flipping Off the Flip

Creative enters the tiny camcorder space with Vado

Vado
Creative $110 www.creative.com
Dimensions: 55 x 102 x 13mm (WxHxD) Weight: 84g

Pros:	Cons:
Small, thin and light	Software offers no editing functionality
Shoots VGA video	YouTube uploading wonky
Rechargable battery	No case or lanyard included

About the size of a thin-format cell phone, the Vado is Creative's entry into the relatively new ultra small camcorder product category, popularized by the Flip line from Pure Digital Technologies. The styling is very much in line with the Flip Mino which costs $70-$80 more.

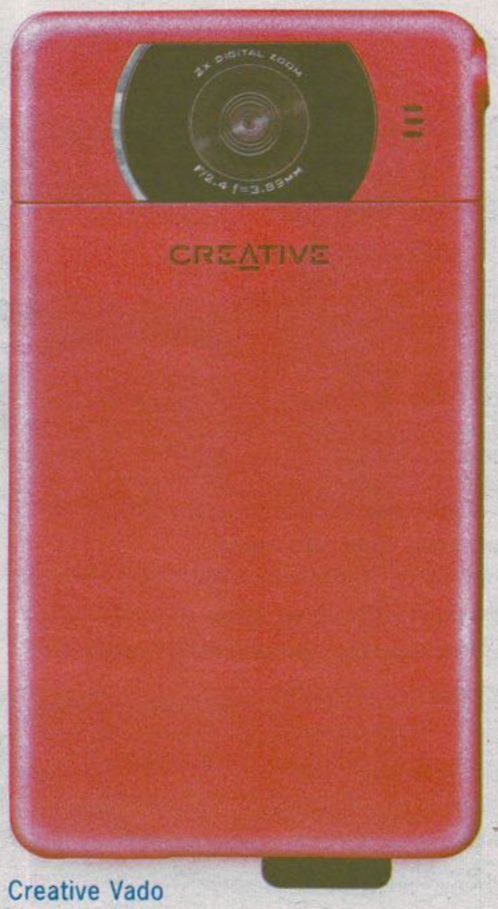
At first blush, the Creative Vado, in its brushed gunmetal grey, metallic casing without adornment save the requisite lens and microphone, looks a lot more business than the Flip Ultra with its plastic casing and bright-coloured highlights. Whether that's a good or a bad thing depends entirely on perspective. While the brightly-coloured Flip Ultra screams "fun," the Vado would be equally at home recording an amusing video of your cats to upload to YouTube (because people are just dying to see that) as it would be shooting a quick house tour in the hands of a real estate agent. That said, the Flip is also available in more demure, monochrome casings while the Vado can also be had in a bright pink casing.

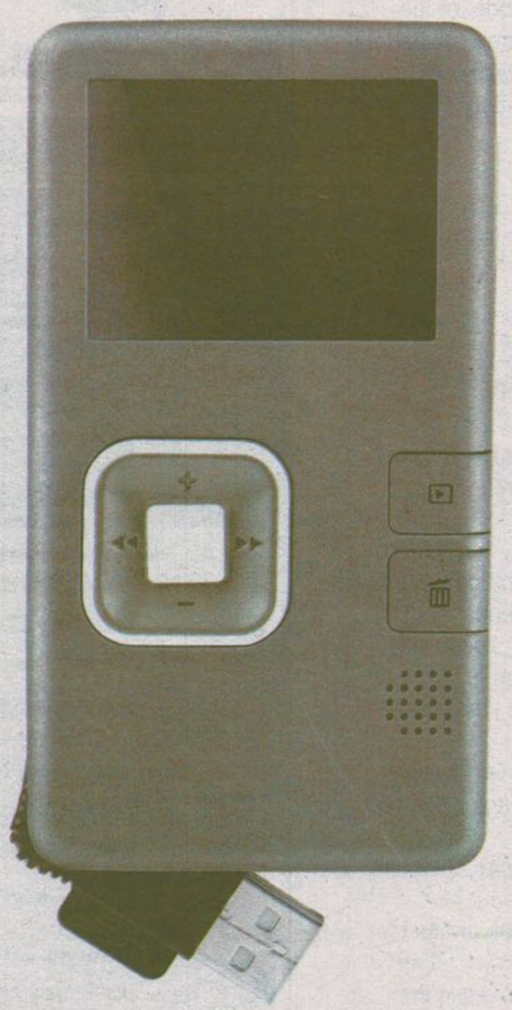
Where the Flip uses two non-rechargeable AA batteries (included), the Creative Vado incorporates a removable rechargeable battery that product literature claims is good for about two hours of shooting. In our tests, the overall use time was closer to 1.5 hours. Still not bad, especially given that when shooting at high quality (640x480) the 2GB of onboard memory can hold one hour of footage, so you'll likely run out of space before you run out of juice.

Shooting video

Catching the action is simple; it's literally a point and shoot affair. Point the lens in the general direction of the thing you want to capture, hit the large, square button in the middle of the direction pad cursor keys and that's it. Unlike the vast majority of digital camera or cell phone video capture, you can zoom in as you record... a favourite move of amateur videographers everywhere. The Vado incorporates a staged 2x digital zoom which, as with all digital zoom, crops a section of the frame rather than actually zooming in. As such, it's best avoided unless absolutely necessary.

The Vado is comfortable to hold and a standard tripod mount on its bottom side makes it perfect for a handlebar or other outdoor gear mount, standard tripod or mini tripod, monopod and the like.





Creative Vado

Watching video

The 2-inch colour LCD screen does a decent job of playing back video stored on the Vado. It also has a side-mounted AV-out jack to connect the gadget directly to your TV with a compatible AV minijack to RCA cable, which is not included in the package, but will be available soon through the Creative store. Standard three-stage mini to RCA cables will work, if you have one kicking around.

The Vado isn't plagued by any of the frame dropping that can impact small form factor camcorders like those incorporated into cell phones. Note that we're not leveling that criticism against the Flip Ultra here though, with its smooth, jitter-free video playback and capture.

Transferring and (not) editing

As with the Flip, the Creative Vado has a short USB lead hardwired to the device as well as video software on board. Simply plug the Vado into an available USB port, choose to run the Vado software at the Windows autorun screen or navigate to the executable file on the device if autorun is disabled. Recently shot videos will appear in the Vado software and can be viewed, easily transferred to a folder on your PC or uploaded to YouTube or Photobucket.

If you choose to upload to YouTube, you'll need to have an existing account. Provide the login details, select the video(s) to upload, fill in the appropriate title, tag and description text boxes and hit send and the Vado software does the work. Sounds great, however several attempts to upload video were unsuccessful. While the transfer went through without issue and a confirmation was given, the videos were nowhere to be found on my account page or on YouTube itself. They seemed to have vanished into the ether(net).

The major issue — which could be a killer — is that the Vado software doesn't include any editing functionality. Where the Flip Ultra includes Muvee editing software to turn your raw footage into a much more watchable format, this is a glaring hole in the Vado offering. As such, the software that's bundled in to the device is essentially useless. All that's really offered is a prettier interface for transferring video from camera to PC and then, (at least in theory) uploading a video to YouTube or Photobucket.

For OSX users, the Vado will turn up as a standard USB disk. Videos can be dragged and dropped from player to PC but the Vado software embedded in the camera is PC only.

Final thoughts

What it does, it does well: The Vado shoots good quality video that looks great on an online video host or running windowed on your PC. It's easy to share video from the device and it looks great if you have a standard resolution CRT TV. Anything bigger and the mere VGA recording starts to show artifacts. As a camcorder that fits easily in a pocket and is ready to go at a moment's notice, the Vado is a winner. It's also less expensive than the primary competition, the Flip Ultra. However, without any sort of on-board video editing software, the extra cash required and the extra bulk of the Flip Ultra might seem a worthwhile sacrifice.

If the Vado included video editing software, it would be close to a perfect single-function device. Alas.

By Andrew Moore-Crispin

Working in Word for Students

Top 10 tips for students to get the most out of MS Word

Back to school time is a great time to get your Microsoft Word skills up to date so that, when the first assignments roll in, you're ready to start typing and you won't waste time trying to find the features that you need and how to work them.

We've put together the top ten tips for working with long documents such as essays and reports in Microsoft Word. The deal is, we'll help you to get great looking documents but the content... well, that's up to you.

Student Edition

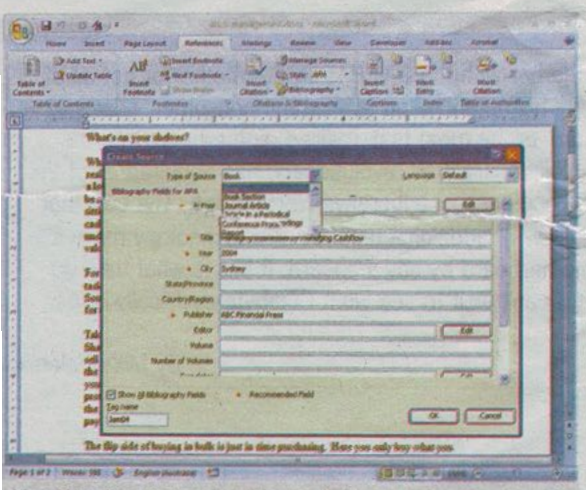
Microsoft Office comes in a number of configurations, however, if you have a student in the family, the Microsoft Office Student Edition is a great buy. This edition allows you to install the program on three PCs and, provided the program is not used for business purposes, the entire family can have access to it. Find more information and a link to a 60-day trial version at the Microsoft website, http://tinyurl.com/578aaz.

Page numbering

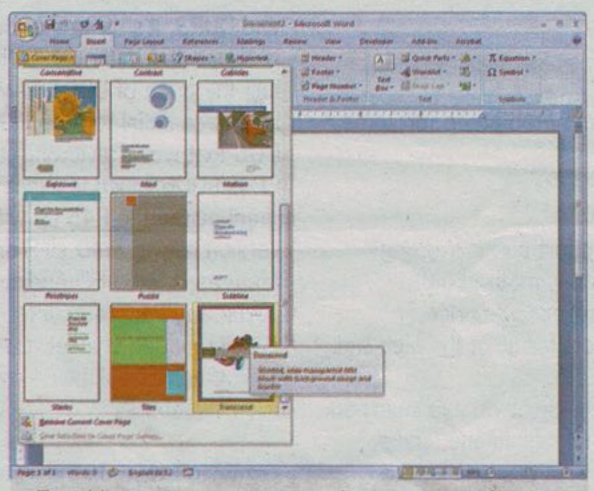
Numbering pages in a long document helps you organize your pages and if you need to print a single page, it's easy to determine which one to print. To number pages in Microsoft Word 2007 choose the Insert tab and click Page Number. Select the position of the page number and one of the various page number options which range from simple to stylish. Page numbers can be added to either the header or footer as desired. The page numbers are automatically incremented by Microsoft Word so that once you've added the page number code you can forget about it as all the pages will be taken care of.

Change orientation

When you need to start a new page in your document, click where the new page should start and press Ctrl + Enter to create a forced page break. If you need a page break so you can change the page orientation — for example to add a landscape page, click the Page Layout tab, click the dropdown arrow beside the Breaks button and choose Section Breaks: Next Page. You can now change the orientation of the page and only this and the following pages will be affected. To change back, add another section break and change the orientation back to Portrait.



Use Word's citation tool to track the resources you use and insert references into your document.



To add a cover page to your document use the new Word 2007 cover page feature.

Cover page

Microsoft Word 2007 has a new feature to create an automatic cover page for a document. These cover pages give your assignment a sophisticated look. To add a cover page choose the Insert tab and click the Cover Page option. This displays a series of beautifully designed cover pages. The images and photographs on any of these pages can be removed or replaced with an alternate image so choose the one that looks best to you.

Footnotes

Footnotes let you add extra information to your document at the foot of the page. At the insertion point you will get a number and at the bottom of the page the number is repeated where you can type some more information. Footnotes are separated from the text on the page by a line and Word ensures that the footnote and the reference in the text stay on the same page. To add a footnote click where the reference number should appear and click the References tab > Insert Footnote. Word adds the number and moves you to the foot of the page where the number also appears — type your footnote text here.

Organize data in tables

If you have data that can be organized in a grid-like format use a table. To create the table, from the insert tab click the Table button and click and drag over the number of rows and columns for your table. It's more important to get the number of columns correct — you can add new rows at any time by clicking in the last cell of the table and press the Tab key. To format the table, click in it, click the Table Tools > Design tab and, from the Table Styles dropdown list select a table style to format your table.

Citing a source

When you reference a source such as a book or a website you will need to add a citation in your document indicating that the information came from a defined source. To do this, click the References tab, click the Style dropdown list in the Citations and Bibliography area and choose the style format to use such as Chicago, APA and so on. Click at the end of the quote or item to cite and click Insert Citation. Click Add New Source and type the details of the source item. The citation information appears in the document at this position. Next time you cite this source it will appear automatically in the Insert Citation menu. When you are done, create the actual bibliography by clicking where it should appear in the document and click the Bibliography button then choose a format to use for the source list.

Save your work

There is nothing more frustrating than losing hours of work when you have an essay deadline approaching. It seems as if the later you are, the greater chance you have of doing something careless and losing your work. To make sure your work is saved as you go, click the Microsoft Office button > Word Options > Save. Click the Save auto recover information button and set it to a period of time that ensures you won't lose a lot of your work if your computer crashes — ten minutes is a good choice. To create a backup copy of your document every time it is opened or saved, from the Advanced tab select the Save group options and click Always Create Backup Copy.

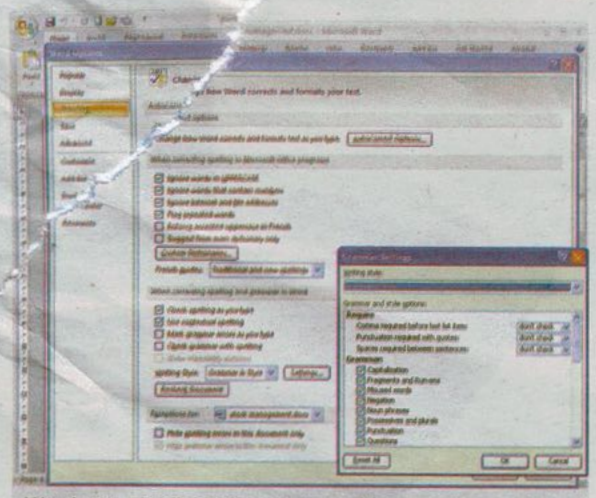
Use styles

To format your document consistently use Styles which you select from the Home tab in Word 2007. Select the text to format and apply a style such as Heading by clicking it in the Styles gallery. To change the look of the style, right-click the style in the Styles gallery, and click Modify. The changes you make will be applied to every piece of text in the document formatted with that style.

Is it correct?

Microsoft Word can help you by checking your writing style for potential problems. To configure this, click the Office button, select Word Options > Proofing. To have Word check your grammar and style from the Writing style list, choose Grammar & Style and click Settings. Select the things Word should check for in the document such as punctuation, spaces, capitalization, etc. This lets you customize Word so that it looks for likely problems in your writing so you can fix them.

By Helen Bradley



Word can check your style as well as grammar so you can eliminate many problems with your writing.

Gigabyte GA-EP45-DQ6

Is it possible to have too many features?

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Pros:
Long list of features
Overclocker friendly
Tons of room for expansion

Cons:
Price of entry too steep for some

Intel recently launched its P45 Express chipset, widening support and increasing performance in mainstream Intel-based motherboards. Naturally, motherboard manufacturers have been eagerly awaiting the chipset since it offers a price advantage over Intel's higher-end parts, while retaining support for all of the high-end technological goodies.

Being one of the biggest third-party hardware manufacturers, Gigabyte has launched an entire line-up of P45-based motherboards in order to completely fill the space, from entry-level to high-end. The motherboard we're looking at in this article, the Gigabyte GA-EP45-DQ6, is positioned as Gigabyte's top-of-the-line P45-based motherboard. What Gigabyte has managed to do with the GA-EP45-DQ6 is turn the mainstream P45 chipset into a powerhouse.

The P45

Design-wise, the biggest difference between the P45 and Intel's current high-end X48 chipset is that the P45 uses a 65nm fabrication process, whereas the X48 (and all previous Intel chipsets for that matter) still use a 90nm design. Smaller fabrication process means it's cheaper to produce as it uses less silicon and should operate at a cooler running temperature.

Other than that, there are no major technologies being introduced with the P45. Intel has instead decided to migrate many of the X48's major features over to the new mainstream chipset. This is a win-win for consumers since P45 motherboards will typically cost less than their X48 counterparts and many of the X48 features that are now available in the P45 are quite substantial.

Of particular interest is that PCI Express 2.0 is supported in the P45, doubling PCIe bandwidth from 250mb/s to 500mb/s. While the current real-world performance improvement is negligible (you might see a slight boost in video card performance), PCIe 2.0 support is important because it ensures the future compatibility of P45 motherboards.

Surprisingly, Intel opted to include their Extreme Memory Profile (XMP) technology in the P45 as well. With support for 16GB of RAM, the P45's ability to utilize XMP will offer considerable performance to memory that would otherwise go unweaked. XMP automatically configures system RAM to run at optimal and stable settings. In traditional chipsets (e.g. everything prior to the X48/38), memory timings would default to the most stable — and hence slowest — settings available. Like PCIe 2.0, while this isn't necessarily a new technology, it will be new to the majority of users.

Speaking of memory, it's important to note that while the P45 supports both DDR2 and DDR3, it's up to the motherboard manufacturer to decide which type of memory is supported. Although DDR3 is considered futureproof, DDR2 is currently less than half the price of DDR3 RAM. In that respect, depending on your usage, it may be more beneficial to have 8GBs of DDR2 now, rather than 4GB of DDR3. The GA-EP45-DQ6 that we're reviewing is the DDR2 version. Gigabyte has also launched the GA-EP45T-DQ6 which is exactly the same as the GA-EP45-DQ6, but uses DDR3 instead.

Intel paired the P45 up with either the ICH10 or ICH10R Southbridge (the "R" version having RAID support). The ICH10 Southbridge supports its own plethora of features — Intel HD Audio, up to 12 USB 2.0 ports, six PCIe x1 slots, six SATA3 ports, and integrated Intel 1Gbit Ethernet — all of which help make the P45 Express a well rounded chipset. Optional support for two full-sized PCIe x8 slots (for multi-card graphics solutions) and Intel Turbo Memory make the P45 Express chipset even sweeter.

Gigabyte's take on the P45

With the GA-EP45-DQ6 it seems as though Gigabyte used the mainstream chipset as an excuse to include tons of extra features above and beyond what the P45 Express already offers. They packed the motherboard with a number of luxuries that, in all honesty, will probably only be used by the most avid PC enthusiast. While this would normally place the GA-EP45-DQ6 in a very niche category, because the P45's performance is very comparable to Intel's high-end chipsets like the X48, it actually makes this motherboard one of the most feature-packed performers available... and there's nothing niche about performance.

In fact, in some areas Gigabyte may have gone slightly overboard with GA-EP45-DQ6. Take, for example, its onboard Ethernet configuration; the GA-EP45-DQ6 has four Gigabit Ethernet ports. I can't think of a household scenario where four Ethernet ports would be necessary, even if you were using the system as a network bridge or to share an Internet connection. Fortunately all four ports support Teaming, essentially allowing you to combine connections to double or quadruple throughput to 4GBit/s.

Similar overkill is seen in Gigabyte's decision to usurp the P45's built-in Intel HD audio by including a separate SNR ALC889A HD codec to offer Dolby Home Theatre audio. On paper, the differences between the two are noticeable (full Blu-Ray audio format support at 106dB, official Dolby Home support), but I have a hard time believing that the ALC889A is vastly superior to Intel's HD audio in real-world audio applications. Of course, if you're an audio professional that needs the highest audio quality possible, you would want to be using a discrete audio solution anyway.

Luckily many of the features seen in Gigabyte's other high-end motherboards are here as well. DES advanced power management, Virtual 12-phase power, CrossFireX support, two additional RAID chips (ICH10R has built-in RAID and there are two separate Silicon Image 5723 chips for use with Gigabyte's Smart Backup software), dual BIOS, Gigabyte's Ultra Durable 2 build process, two PCIe x4 slots, two regular PCI slots, and one PCIe x1 slot... Essentially more stuff than most users would know what to do with.

For external expansion purposes, Gigabyte has packed eight USB 2.0 ports on the rear I/O panel (two below each of the four network ports), a FireWire backplate (with both an fw400 and an fw800 port), and two dual-port external SATA connectors.

Conclusion

Gigabyte has definitely raised the bar with the GA-EP45-DQ6. Whether or not all of these features are necessary will ultimately be up to you, the consumer. That said the GA-EP45-DQ6 is definitely one of the most feature-filled motherboards on the market. The P45, while more evolutionary than revolutionary, has acquired all of the X48's major strengths making it one heck of a lucrative Northbridge. The fact that Gigabyte decided to pour on a slew of additional features and technology make the GA-EP45-DQ6 quite a robust motherboard by any standard. If this is what they do with Intel's mainstream chipset, I can't wait to see what Gigabyte eventually does with the X48's successor.

By Mike Palermo

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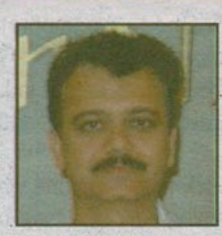
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Power Pellets: PC Gaming on the Brink

Industry-backed associations would have players believe hardcore PC gaming is thriving. It's not.

A new organization dedicated to the support and promotion of PC gaming came into existence earlier this year. Dubbed the PC Gaming Alliance, the association gathered the resources and talents of a variety of industry heavyweights, including nVidia, AMD, Activision, Epic Games, Microsoft, and Dell. As its first president it named Intel's Randy Stude.

Stude quickly got to work telling anyone who would listen that, contrary to popular belief, traditional PC gaming isn't declining but rather, thriving. He came up with plenty of impressive sounding numbers, including one that suggested there are over 250 million PC gamers worldwide and another that argued global PC gaming sales are on the rise, growing 14 per cent in 2007 to $8.3 billion.

Inspiring figures, to be sure. And they should sound familiar; we've heard them before from Microsoft's struggling Games for Windows division.

But they are misleading.

You can't handle the truth

The vast majority of gamers counted in the quarter of a billion PC players currently existent are casual gamers, a category that counts as its primary constituents women over thirty years of age who use old hardware to play the sort of simple and cheap titles available through online portals such as Yahoo Games. Indeed, the Casual Games Association places the number of casual PC gamers at well over 200 million — accounting for four fifths of all PC gamers.

In other words, the industry that caters to so-called "hardcore" gamers is using casual gaming's success and continued growth to beef up its numbers and make it seem as though traditional PC gaming isn't in the kind of jeopardy many people suspect.

But, of course, it is. The symptoms leading to this diagnosis are obvious and unmistakable.

Look at the Electronic Entertainment Expo (E3), North America's largest video game tradeshow, held annually in Los Angeles. The presence of PC games at this past July's show was frighteningly minimal, with only one significant PC-exclusive game announcement of note — BioWare's Dragon Age.

And have you compared your local game retailer's PC release schedule with those of the consoles? The number of games slated for release on Windows platforms is pitifully low relative to the Xbox 360, PlayStation 3, and Wii. Plus, the majority of PC games hitting shelves are merely ports of titles originally developed for consoles — meaning that, by and large, they aren't optimized to take advantage of the potentially superior hardware possessed by Windows platform players, which negates one of the primary benefits of PC gaming.

Next, consider the high profile games that have been released with no PC counterpart. Last spring's Grand Theft Auto IV became the highest grossing game of all time without the benefit of a PC release. And developers of franchises once considered bastions of PC gaming, such as DICE's Battlefield games and Firaxis' Civilization sims, have taken to creating console-only editions of their games. Are they simply taking advantage of a different market, or are they rats fleeing a sinking ship?

Gamers to be couch-bound?

Of course, some triple-A games that originally debut only on consoles — Gears of War, Assassin's Creed, Mass Effect, and the Halo games, for example — eventually show up on PCs, but only long after their original release. Some analysts believe these delayed PC releases are the result of publishers' fears that PC software piracy will negatively affect console game sales, the rationale being that piracy is so widespread and simple that even Xbox 360 and PlayStation 3 gamers will attempt to download illegal code for their PCs if they can rather than pay for a console version.

A ray of light for PC gaming rests in the realm of massively multiplayer online (MMO) gaming. As has been reported previously in these pages, Blizzard's World of Warcraft is a multi-billion dollar giant that dwarfs the revenues and profits generated by any non-MMO game — for PC or console. The PC platform has all but monopolized this highly profitable genre, and its subscription-based model, which forces players to access closely monitored servers, makes piracy extremely difficult.

The problem with MMOs is that they have a limited audience; players must be willing to spend months or years with an online game in order to build up their characters. What's more, MMOs are so time consuming that those who do commit to them are unlikely to play more than one game at a time, making it difficult for new developers and titles in the genre to find footing.

A better beacon of hope might be this month's Spore, from SimCity creator Will Wright. It's designed to appeal to casual and hardcore gamers alike, featuring a wide variety of play styles that range from simple arcade games to multifaceted civilization simulations. Spore's pedigree combined with the fact that it will not be released on any console all but guarantees PC sales numbering in the millions of copies.

And what if you don't groove on MMOs and civilization sims manufactured for broad appeal? Best get used to the idea of couch-bound gaming, because as time goes on it will increasingly become the only sure-fire way to play the titles you like when you want.

Devil May Cry 4

Reviewed on: Dell XPS 730 H2C, featuring dual 768 MB nVidia GeForce 8800 Ultra graphics cards, 4 GB of Corsair Dominator DDR3 SDRAM, and an Intel Core 2 Extreme QX9650 quad core processor running at 3.0 GHz; displayed at 1920-by-1200 on a Dell 2407FPW 24-inch LCD.

Score: 4/5

It's been available for several months on the Xbox 360 and PlayStation 3, but now PC gamers finally have a chance to get their hands bloody with the fourth instalment in Capcom's ridiculously over-the-top, ridiculously violent, and wonderfully melodramatic Devil May Cry franchise.

Perhaps the most accessible game yet in the series (which is infamous for its punishing battles), players have the option of partially automating their attacks and scaling back the intelligence of their computer-controlled foes, resulting in a game that should be playable by gamers of all skill levels.

Of course, that's assuming you have a gamepad. Trying to use a keyboard and mouse to manoeuvre through DMC4's environments and carry out complex attacks originally designed to be facilitated by a traditional controller ratchets up the game's difficulty exponentially.

However, if you've got a console-style gamepad you'll be in hack 'n' slash heaven. The series' trademark mishmash of sword and gunplay is as strong as ever. It provides several new fighting styles in which to train while retaining such unbelievable — but undeniably cool — abilities as being able to jump and either swipe your sword or fire your gun (or do both) dozens of times before landing.

And the game's cinematic graphics look at least as good on the PC as they did on consoles. Environments are composed of intricate gothic architecture, and character models are extraordinarily stylized and detailed — think fluffy white coifs, ornate buckles, and impractically long and flowing trench coats. As pretty as the real-time rendering is, the polished CGI movies, which feature inhuman combat acrobatics and slow-motion camerawork, are even more beautiful.

Devil May Cry 4 may not be a perfect fit for PC play, but if you're a Windows gamer looking for a bloody, Japanese brawler you won't do much better.

By Chad Sapieha

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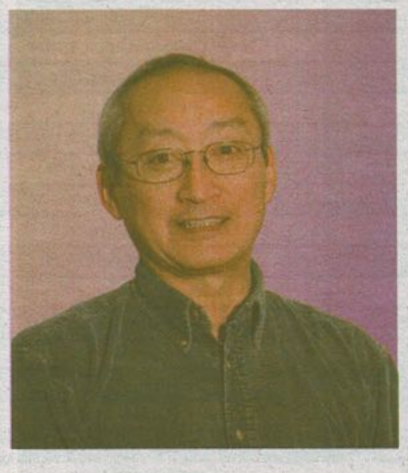

It's back to school time. I'll be back too, but facing students as a writing instructor in the new media program at my local college. I've done this before but last January seemed to mark some kind of tipping point. I was warned by teachers that had them the previous fall: this batch of students is different. Different how? They seemingly have attention problems. They are always doing something else, surfing the web (we teach in a media lab), texting or doing whatever on their blasted Facebook pages.

Remedial steps were discussed: make them turn off their phones, shut off the computers, etc. — anything to get their undivided attention for 50 minutes. But, one instructor told me, when she had everyone turn off their monitors, even the best students got fidgety after just a few minutes.

I stepped into this generational ADD morass expecting the worst but not having a bad experience. Sure there are lots of distractions in a modern classroom, especially in a multimedia lab with all kinds of cool software loaded on the machines. It slowly dawned on me that the 50 minute lecture was the alien in this environment. For this fall the course has been restructured with more lab time, and I'm hoping the fit will be better.

It's been said that students learn as much from the structure of education as they do from the content. Schedules, punctuality, repetitive exercises and other time-based regimes trained the workforce for a nine-to-five office or factory workplace — a pure industrial age model. How does that fit the modern knowledge workplace?

The sit-for-50-minutes event is the business meeting. Meetings are important but in many places, they aren't the primary crucibles of productivity. More often than not, work happens discontinuously and on the fly — poking your head in someone's office, chatting in the hall, deciding over lunch or while on a plane These can be as important as sitting in your office and working on a specific task. Likewise, BlackBerries, e-mail, video conferencing and such make time and location irrelevant to working (whether that's good or bad is another issue). We still have deliverables and deadlines, but also a lot more flexibility in how, when and where we do the task.

What we are witnessing as instructors in the classroom is the collision of industrial age structures with information age behaviours. The central problem is how to hold their attention so that we can teach them something. It's not a new problem, but the Internet age provides a new context. How to hold someone's attention is also one of the central challenges for any new media producer. So, that's my situation in the classroom but that's also the students' situation when they start work in new media.

One of my colleagues is part of a committee that studies ways to help teachers incorporate digital age technology into teaching. In some cases, this is as basic as adding a web component to library research, or taking greater advantage of the institution's intranet. But there is potential to take this to the next level.

For example, many students know what social networking is about, through their experiences on FaceBook or MySpace. As they live in these spaces, they learn about them often by trial and error: the etiquette, the nuances, the do's and don'ts. When they plug into the work world, general sites like LinkedIn or specific corporate constructs will be important parts of their working environments. At the very least, educators need to sync the learning environment to these new constructs so that when students graduate, there isn't a big disconnect between school and the working world.

Until next time,
David Tanaka

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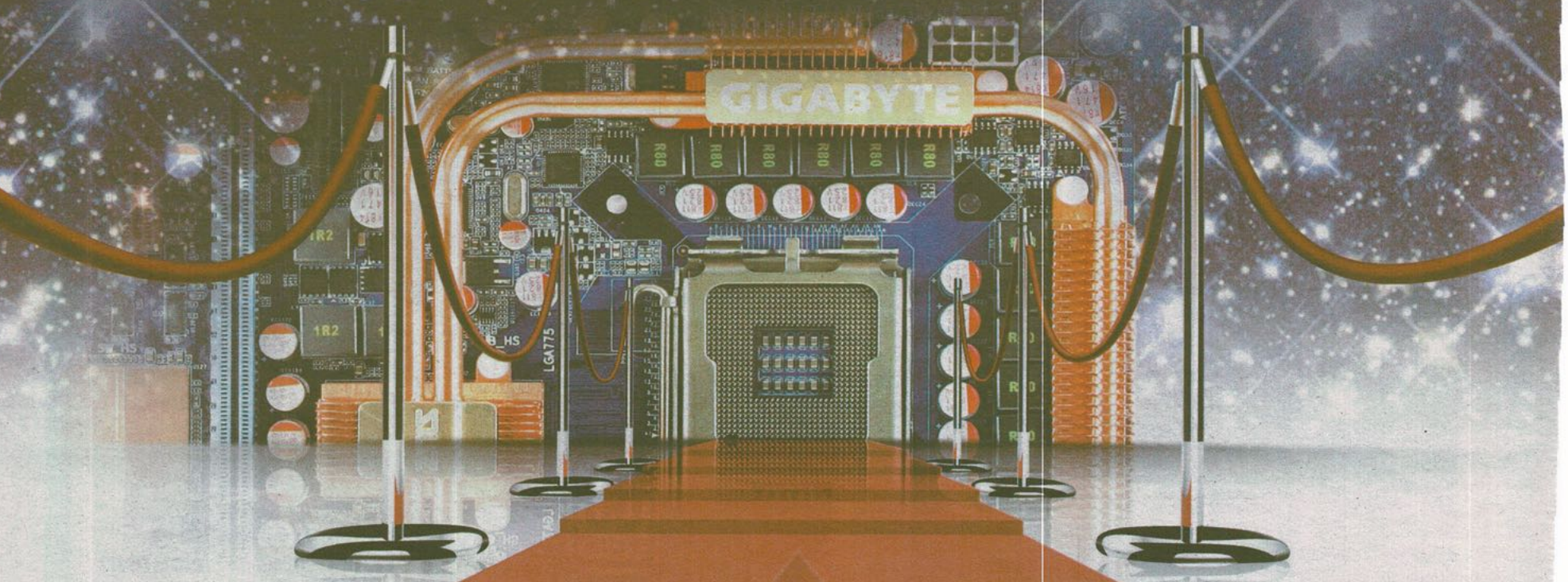

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